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# Textile bulletin

MARCH • 1955

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ALL  
**JACOBS**

LOOM  
NECESSITIES  
ARE  
"Jacobs"

**JACOBS**

**SOUTHERN**  
DIVISION  
Charlotte, N. C.

**NORTHERN**  
DIVISION  
Danielson, Conn.

TEXTILE BULLETIN is published monthly by Clark Publishing Co., 18 West Morehead St., Charlotte 2, N. C. Subscription \$3.00 per year in advance, \$3.50 for three years. Entered as second-class mail matter July 2, 1911, at Postoffice, Charlotte, N. C., under Act of Congress, March 2, 1897.





# CATALOGUE



ANTARA

detergents  
wetting agents  
emulsifiers  
brighteners  
sequestrants  
dyeing assistants

**ANTARA CHEMICALS**  
A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION  
435 HUDSON STREET, NEW YORK 14, N. Y.

## GET THIS *NEW* CHEMICALS CATALOGUE *by return mail!*

Antara presents a new and completely revised edition of its chemical catalogue, giving basic information on the chemicals it produces.

Information on chemical composition, physical properties and application is given on the established products and on new chemicals released in the past few months. In addition, there is a listing of Antara's intermediates:

For your free copy of the new Antara Chemicals Catalogue, fill in the coupon below and mail it today.



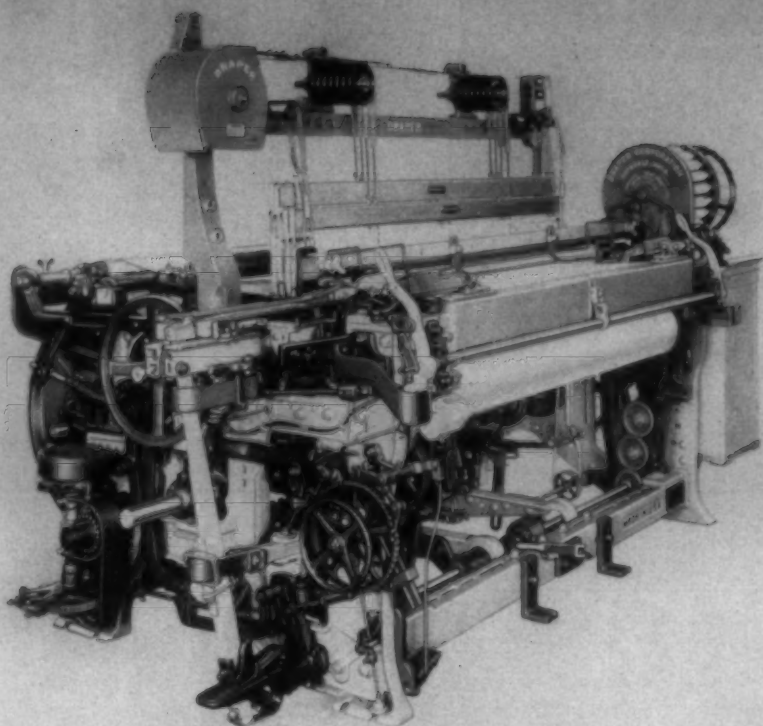
### ANTARA® CHEMICALS

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION  
435 HUDSON STREET • NEW YORK 14, N. Y.

Please send me the new Antara Chemicals Catalogue.

NAME \_\_\_\_\_  
TITLE \_\_\_\_\_  
FIRM \_\_\_\_\_  
ADDRESS \_\_\_\_\_





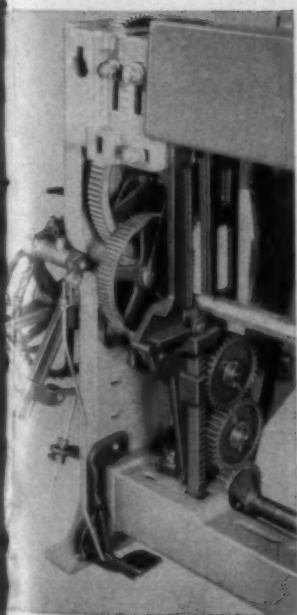
## THE DRAPER X-2 IS THE WORLD'S FINEST SINGLE SHUTTLE LOOM

Here's why:

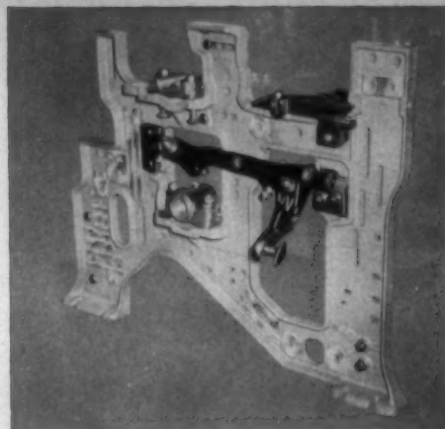
Precision manufacture, rigid construction, and uniform parts permit operation of the Draper X-2 Model Loom at speeds far greater than heretofore possible.

Added efficiency and increased production are direct results of fewer mechanical stops, and the practical application of finer warp and filling controls.

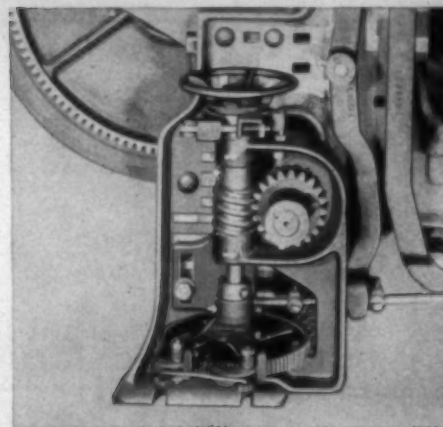
The value of Draper X-2 Looms is clearly indicated by the increasing demand for this model . . . and the *more than 80,000 already in use.*



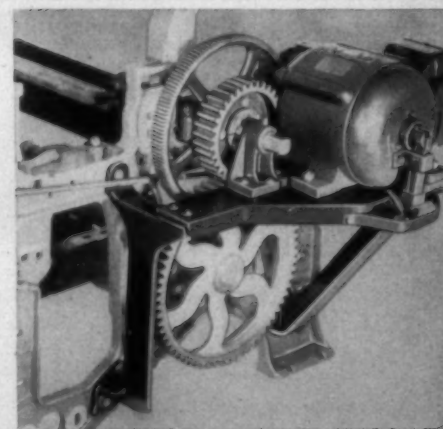
THE RATCHET TAKE-UP permits more accurate yarn control . . . makes it easy to match the pick.



**MORE MILLED** and broached surfaces ensure better fit . . . less wear on component parts.



**SIMPLIFIED DESIGN**, precision gearing, and practical use of anti-friction bearings permit more accurate let-off adjustments.



**THE DRAPER-DIEHL** Power Transmitter . . . a compact power unit providing greater weaving efficiency with less maintenance.



**DRAPER CORPORATION**

HOPEDALE, MASS.

ATLANTA, GA.

GREENSBORO, N. C.

SPARTANBURG, S. C.



**Guarantee  
your Quality**

**Maintain  
your Production**

**REPLACE WITH GENUINE  
SACO-LOWELL PARTS**

**THEY'RE UNEQUALLED FOR  
QUALITY PERFORMANCE DEPENDABILITY**

*these facts tell you why . . . .*

- Materials metallurgically correct duplicating those used in original parts to assure long, trouble-free service.
- Machined to exact tolerances as called for in the original blueprint.
- Designed to meet the exacting specification of the original machinery.
- Guaranteed by Saco-Lowell to give smooth, trouble free operation.
- Efficient service by a special staff of sales engineers and technicians who handle replacement parts exclusively.
- Availability — two centralized parts depots with an "in stock" policy on thousands of parts. 75% of all orders are shipped within 48 hours.

*there is no question about it . . . .*

**IT PAYS TO USE GENUINE SACO-LOWELL REPLACEMENT PARTS -  
THEY'RE GUARANTEED**



**SACO-LOWELL**

60 BATTERYMARCH STREET, BOSTON 10, MASS.

*Shops at BIDDEFORD and SACO, MAINE; and SANFORD, N. C.*

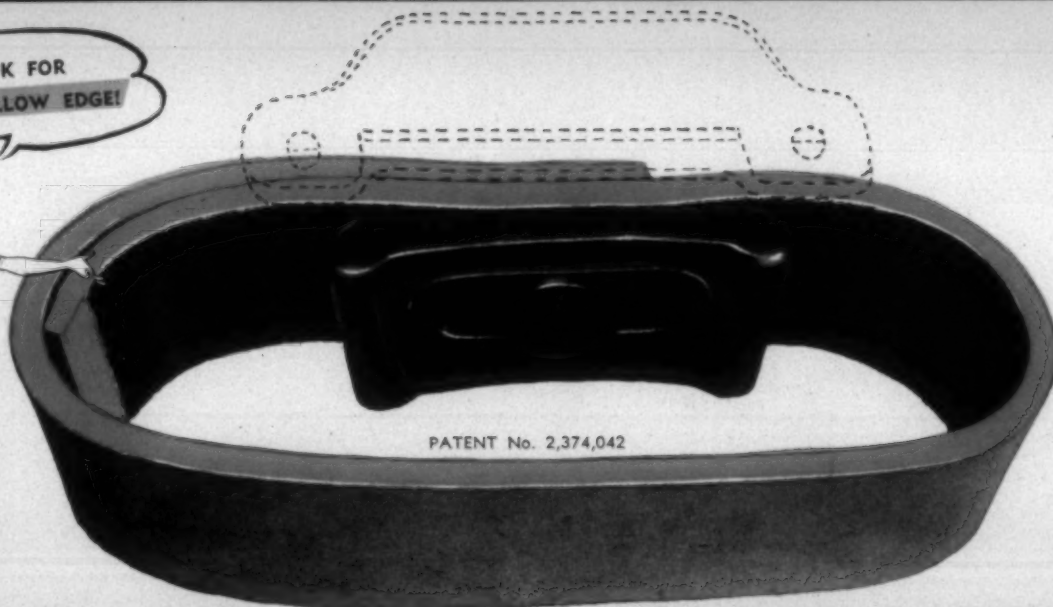
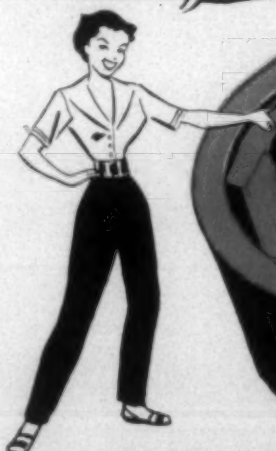
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

**Built for High Speed Punishment... Increase Check Strap Life 100%!**

# Nuform *Type D* Check Straps



ALWAYS LOOK FOR  
THE **YELLOW EDGE!**



PATENT No. 2,374,042



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Here's the combination that cuts your check strap purchases up to 50% . . . gives twice the life of ordinary straps!

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- TOUGH CRIQUE CHEVAL LEATHER
- CHECKS HIGH-SPEED LOOMS BETTER
- ALSO IN RIGHT- AND LEFT-HAND STRAPS FOR DRAPER LOOMS

For CROMPTON-KNOWLES S-6 LOOMS, ask for Special Nuform Type C Check Strap.

## SLIP-NOT BELTING CORP.

Manufacturers and Distributors of Power Transmission Equipment  
**KINGSPORT : TENNESSEE**



**had any  
interesting  
dreams  
lately?**



**WILL PUT NEW LIFE IN YOUR PRODUCT**

**THE  
NEW**

**Nylon**

**Staple**

9 CHANCES OUT OF 10, the NEW Nylon Staple by IRC can make your dream of a new product, or product feature, come true. Here's why.

It's completely and entirely new—with a new brighter-than-bright luster that creates sheen without shine...a new crimp that can come up with new effects...it dyes quicker, deeper, with more absorbency and economy. You can get new resistance to abrasion with it, better spring-back, new strength with finer yarns. All adding up to greater economy and higher quality for you!

And you can expect the NEW Nylon Staple by IRC to give you the same cost-cutting uniformity and performance that industry has come to expect of IRC rayon yarns.

**. BRING NEW PRODUCTS TO LIFE!**

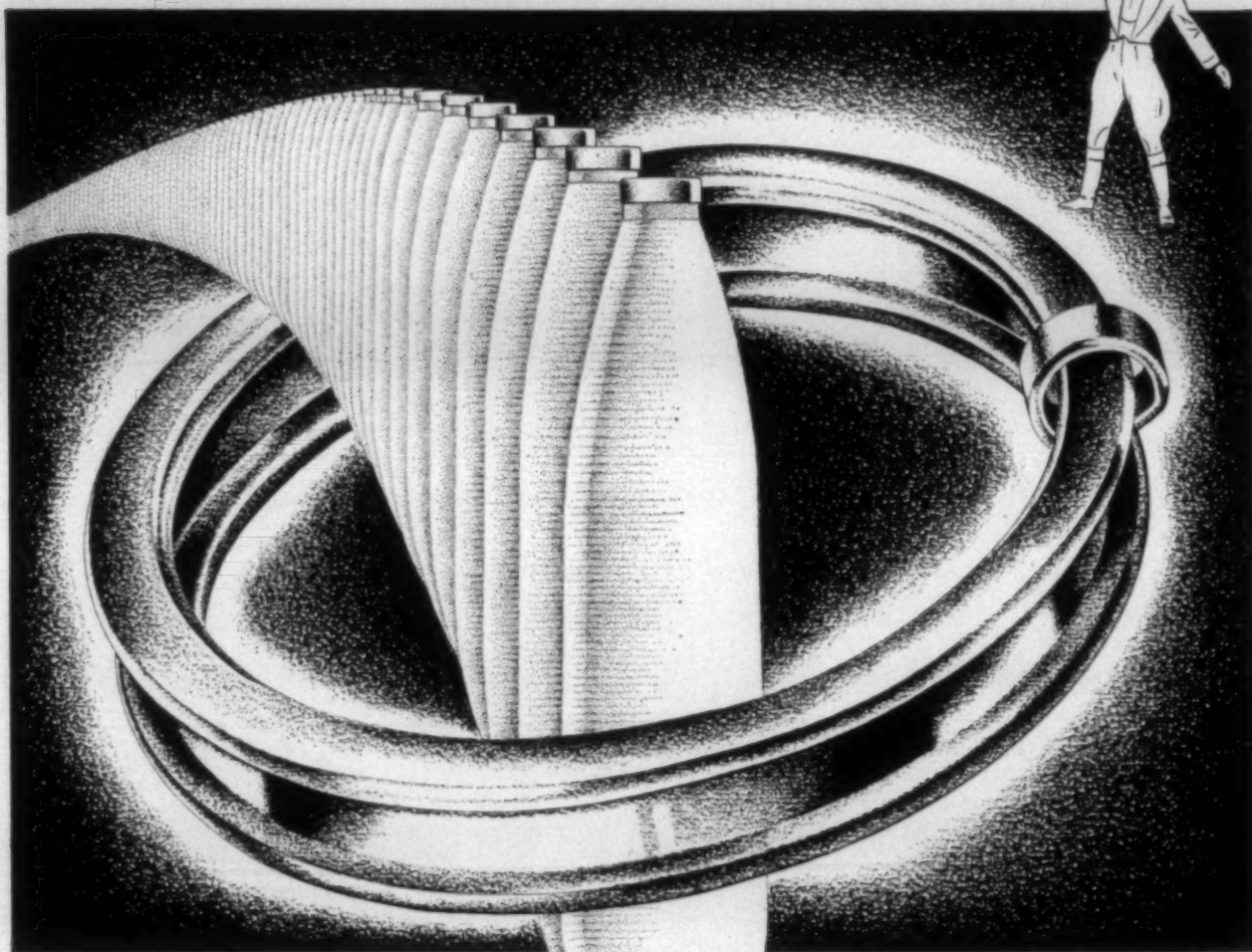
- NEW LUSTER • NEW DYEABILITY
- NEW CRIMP • NEW ABRASION CHARACTERISTICS
- NEW RESILIENCY WITH LESS CRUSHABILITY
- NEW STRENGTH ... AND NEW ECONOMY FOR YOU

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**... of more than 12,000,000 smooth-running spindles!**

**T**oday, Victor Travelers ride the rings on more than 12,000,000 spindles, after 50 years of steadily increasing preference among the nation's ablest millmen. The reasons are clear.

First, consider cost. Since the true measure of a traveler's worth is in the number of pounds of yarn it spins or twists in its lifetime, millmen prefer those that cost the least per traveler-pound.

Victor Travelers consistently deliver more pounds of top-quality yarn — under the toughest condi-

tions — at the lowest possible cost per traveler-pound.

Second, consider design. Whether a mill runs conventional fibers, synthetics, or blends, there is always one traveler that is *right* for the work being processed. Victor service saves you valuable time in selecting that *right* traveler — in setting up the smooth-running spinning or twisting desired.

You'll find that a mill-trained Victor Service Engineer has the ability to analyze problems quickly — to recommend the *right*

traveler. Also, whatever its description, you can be sure its available among the more than 15,000 Victor styles and sizes.

One more reason . . . Victor service is prompt as well as dependable. Try it. Just phone, wire, or write the nearest Victor office.



**VICTOR**  
*Keep a Step ahead with*  
**3 Ring Travelers**

## VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . 20 Mathewson St. . . . Tel. Dexter 1-0737

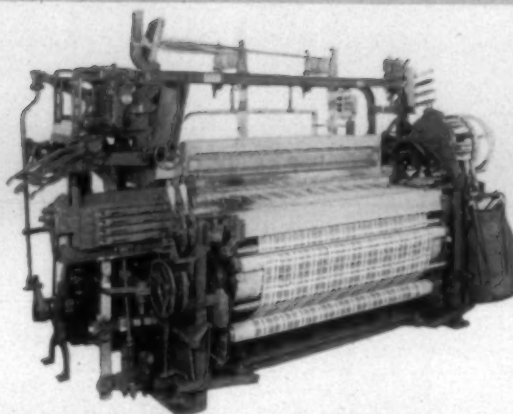
GASTONIA, N. C. . . . 914-916 East Franklin Ave. . . . Tel. 5-0891



No. 5 in a series explaining

# Why C&K's New **M**ulti-**P**urpose Looms mean **M**ore **P**rofit to any mill

## Here are C&K's New Conceptions of CONVERTIBILITY

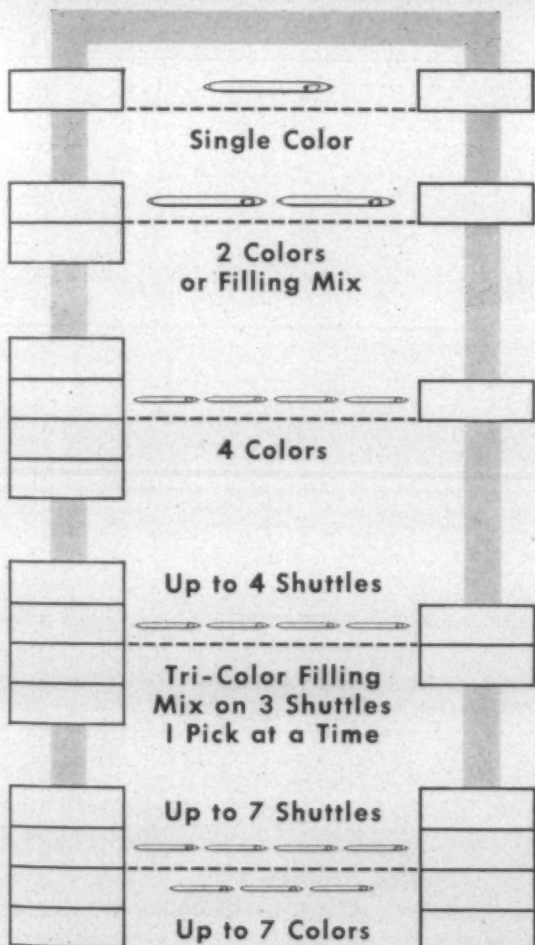


### In any M-P Loom . . . C&K gives you the Most Protection against the changing whims of fashion

Why be tied to a plain 1 x 1 box loom . . . when the Most Profitable operation is in automatic box loom work? Why limit yourself with a 4 x 4 box loom, when a crepe season calls for an automatic 2 x 1 box loom? And why be saddled with a 2 x 1 box filling mixing loom . . . in a season when high fashion calls for fancy fabrics with up to 4 colors of filling for which the automatic 4 x 1 box loom is a must?

And finally, if the automatic 4 x 2 feature\* is needed for Most Perfect blending of filling, this will be available in M-P Looms. Precision-built lays are readily and inexpensively convertible in combinations of 1 x 1, 2 x 1, 4 x 1, 4 x 2, 4 x 4 box\*.

These are C&K's new conceptions of convertibility, designed with a "weather eye" out for any sudden and unpredictable market changes. And that's why . . . if you believe in insurance . . . you'll believe in the M-P Loom. See C&K today.



\*Many of these combinations are now available. Others are on the drawing board.

## Crompton & Knowles LOOM WORKS

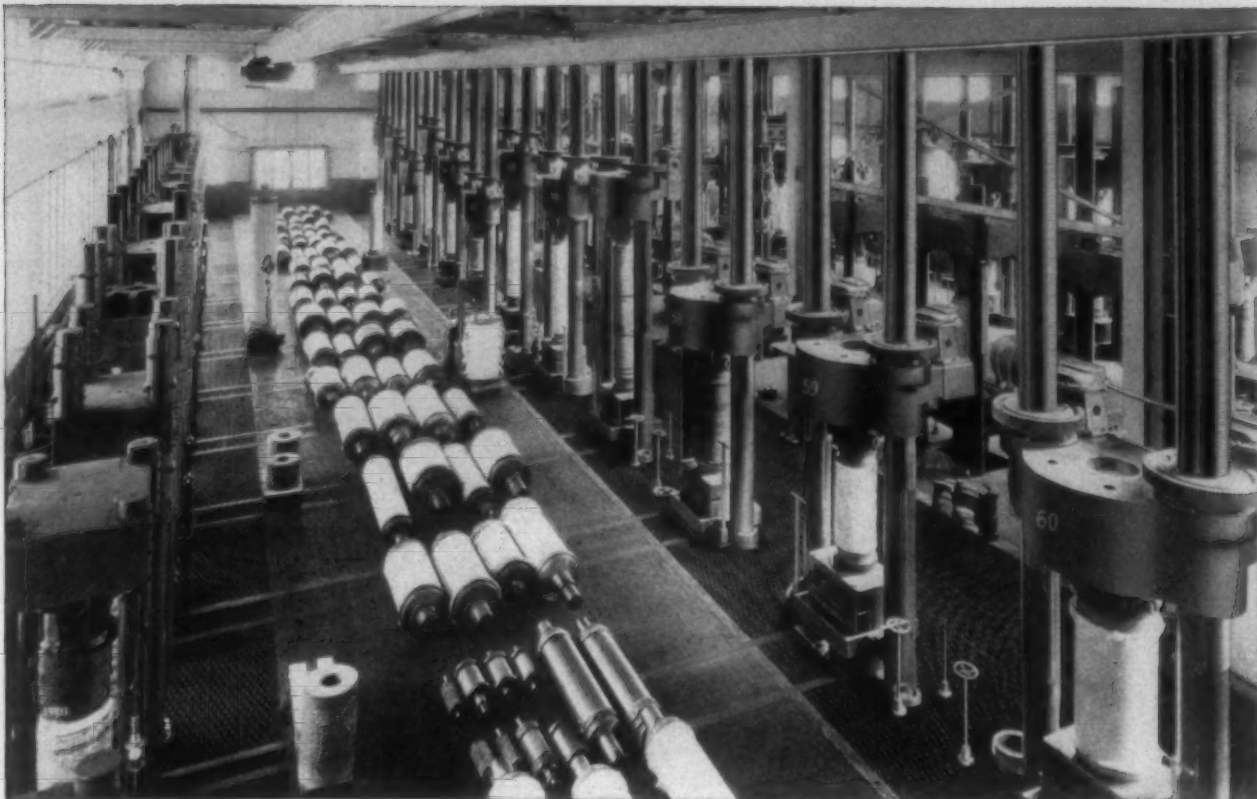
WORCESTER 1, MASSACHUSETTS, U. S. A.

Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa.  
Crompton & Knowles Jacquard & Supply Co., Providence, R. I.  
Crompton & Knowles of Canada Limited, Montreal, Quebec

### THESE NEW M-P FEATURES CONTRIBUTE → TO THESE PROFIT FACTORS

	Better Quality	Increased Work Assignments	Increased Production (Speed & Efficiency)	Lower Maintenance	Versatility
<b>Rotary Magazine:</b> For single color, or for multiple-color work (up to 4).	✓	✓	✓	✓	✓
<b>Scissors Thread Cutter</b>	✓	✓	✓	✓	✓
<b>Vacuum Filling Control</b>	✓	✓	✓	✓	✓
<b>Cone Picking</b>		✓	✓	✓	✓
<b>More Rugged Basic Frame:</b> Common to all M-P Looms.		✓	✓	✓	✓
<b>Letoffs:</b> New composite type. Also other standard and special types.	✓	✓		✓	✓
<b>Takeups:</b> All purpose, silk, or lower winding roll.	✓				✓
<b>Lay:</b> Precision-built and convertible — 1x1, 2x1, 4x1, 4x2, and 4x4	✓	✓	✓	✓	✓
<b>Shedding Mechanisms:</b> Knowles Head — 25 Harness, 4/10" Space Knowles Head — 20 Harness, 1/2" Space Dobby — 20 Harness, 15/32" Gauge Undercam Jacquard	✓	✓	✓	✓	✓
<b>Feelers:</b> As required.	✓	✓	✓	✓	✓
<b>Driving &amp; Shipping</b>	✓	✓	✓	✓	✓

PRECISION, STRENGTH, SIMPLICITY Throughout Every M-P Loom



*Looking in on Perkins Calender Roll Shop, Largest in the World*



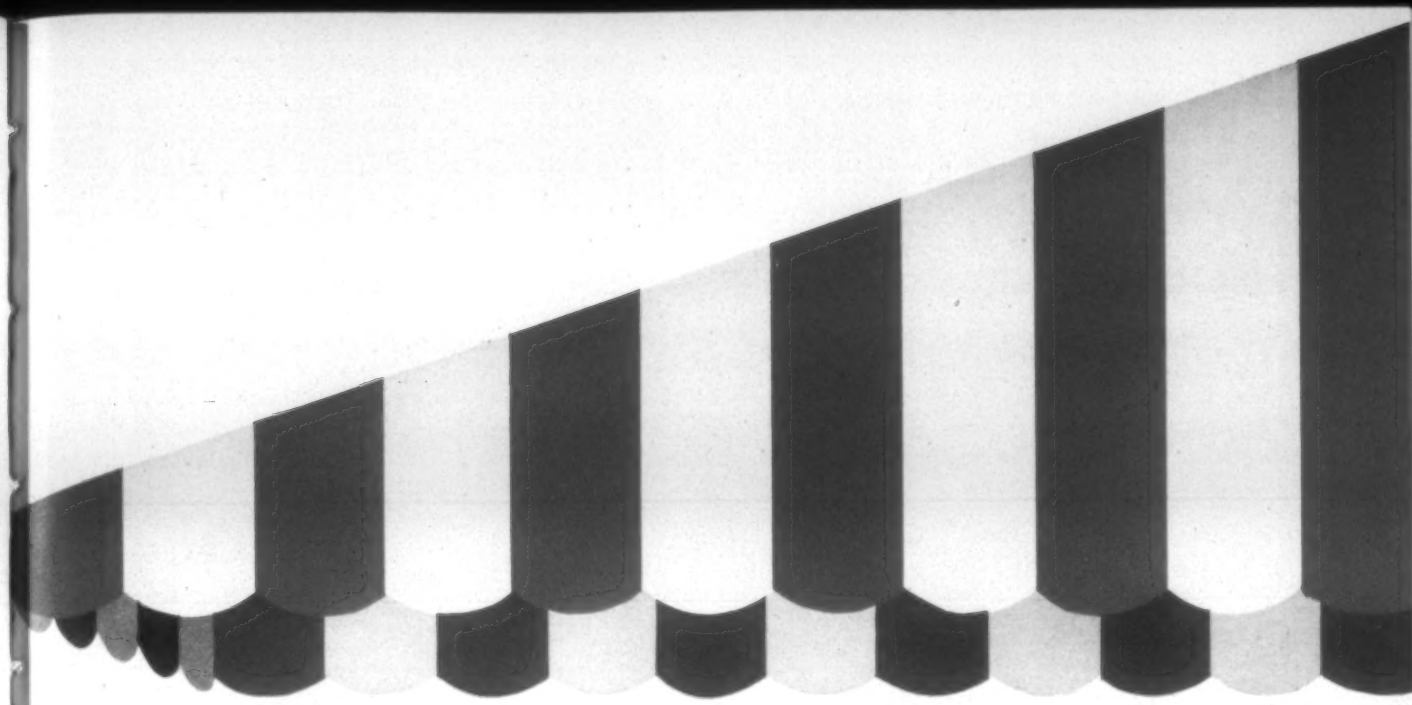
In this modern, completely equipped press roll shop, Perkins famous Calender Rolls of all sizes and combinations and fillings are in process . . . under heavy pressure for a predetermined period of time . . . to produce Perkins Calender Rolls to meet exactly the requirements of the paper and textile industries.

**B. F. PERKINS & SON, Inc.**

**ENGINEERS AND MANUFACTURERS**

**HOLYOKE, MASS.**

**Southern Sales Office: 1609 Liberty Life Building, Charlotte, North Carolina**



*Bright... and right for the great outdoors*

**National Carbanthrene Brilliant Orange RK Paste**

This National Dye is the brightest, fastest, and reddest vat orange in our line. It is highly recommended where very good fastness to prolonged outdoor exposure is desired, such as for upholstery, sportswear, work clothes or industrial uniforms, draperies and other fabrics.

National Carbanthrene Brilliant Orange RK Paste has very good to excellent light fastness; excellent fastness to laundering, boiling soap, chlorine and peroxide bleaching, stoving, mercerizing, cross dyeing, acids and alkalis, dry cleaning, perspiration and sea water.

An anthraquinone vat unaffected by metals in the dye bath, it is suitable for all methods of dye application. Crease resisting resin finishes do not affect the shade, do improve light fastness slightly.

For samples, data and prices write or phone our nearest office.

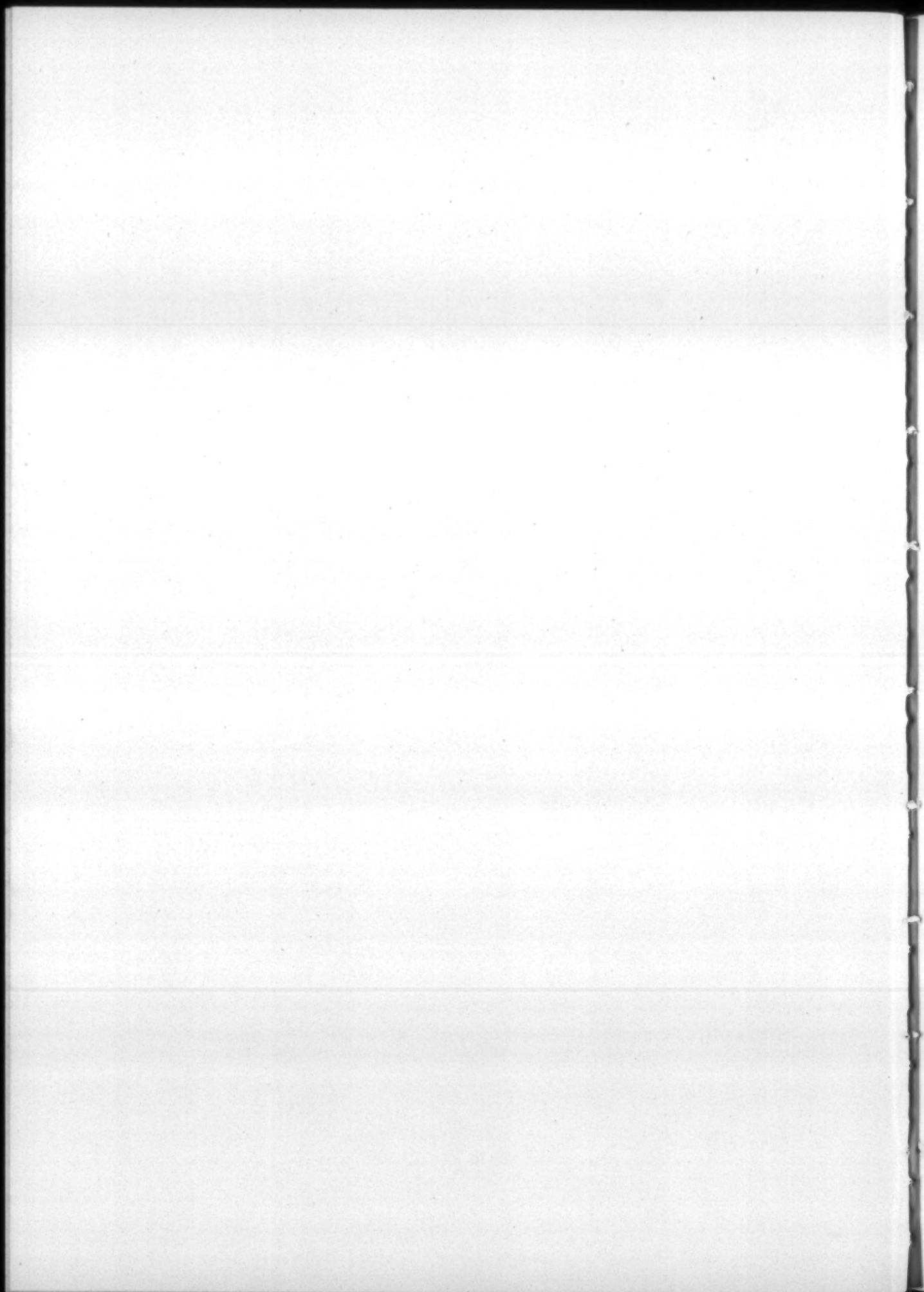


**NATIONAL ANILINE DIVISION**  
ALLIED CHEMICAL & DYE CORPORATION  
40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Philadelphia Chicago San Francisco  
Portland, Ore. Greensboro Charlotte Richmond Atlanta  
Columbus, Ga. New Orleans Chattanooga Toronto







*Avoid this Complaint*



*for practical, profitable,  
permanent shrink proofing! use*



*a dependable product for DURABLE stabilization  
of synthetic and cotton fabrics!*

*"Get these Plus Values!"*

- ★ crush resistance without loading!
- ★ a "hand" with customer appeal!
- ★ outstanding durability to laundering!
- ★ no loss of strength from chlorine bleaching!
- ★ easy to use!
- ★ most textile men find — with HARTORESIN T — the expensive, time-consuming after-wash is no longer necessary!

HARTORESIN T — a genuinely outstanding development — provides lasting and complete shrink-and-crush-proofness for synthetic and cotton textile fabrics. A fabric stabilized for the life of its use is now a reality!

*"Get to the HART of shrink-control — get HARTORESIN T!"*

Save yourself time, worry, and money! Write, wire, or phone now for a sample. Proof is in performance. Top technical service and prompt delivery are assured.



**HART PRODUCTS CORPORATION**

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Works and Laboratories: Jersey City, N. J.  
Hart-Products Company of Canada, Ltd., Guelph, Ontario

# Up Against A Card Room Problem?



## CARD CLOTHING

### *For Example*

One mill, faced with what its president called a "terrible mess in the card room," reported:

"Your man left us in a position to handle our job successfully and with a personnel that he had trained for us. Our weaving efficiency, now over 90%, is about 10% above what it was. We give him all the credit — what he accomplished would have taken us months to do."

IT'S wise, then, to turn to a TUFFER man. He'll be on the job — RIGHT IN YOUR OWN MILL — and help you work out a solution.

He'll come up with *workable* suggestions and recommendations to kick up production and at the same time improve the quality of your material.

**You'll get that valuable ON-THE-SPOT PERSONAL ATTENTION that TUFFER men have been giving to textile mills for years.**

Contact us direct at Worcester, Massachusetts, or at our Southern plants at Atlanta, Georgia or Gastonia, North Carolina. Your call will bring immediate action, without obligation.

B-2

*Manufacturers of Card Clothing since 1866*



# HOWARD BROS.

WORCESTER 8, MASSACHUSETTS

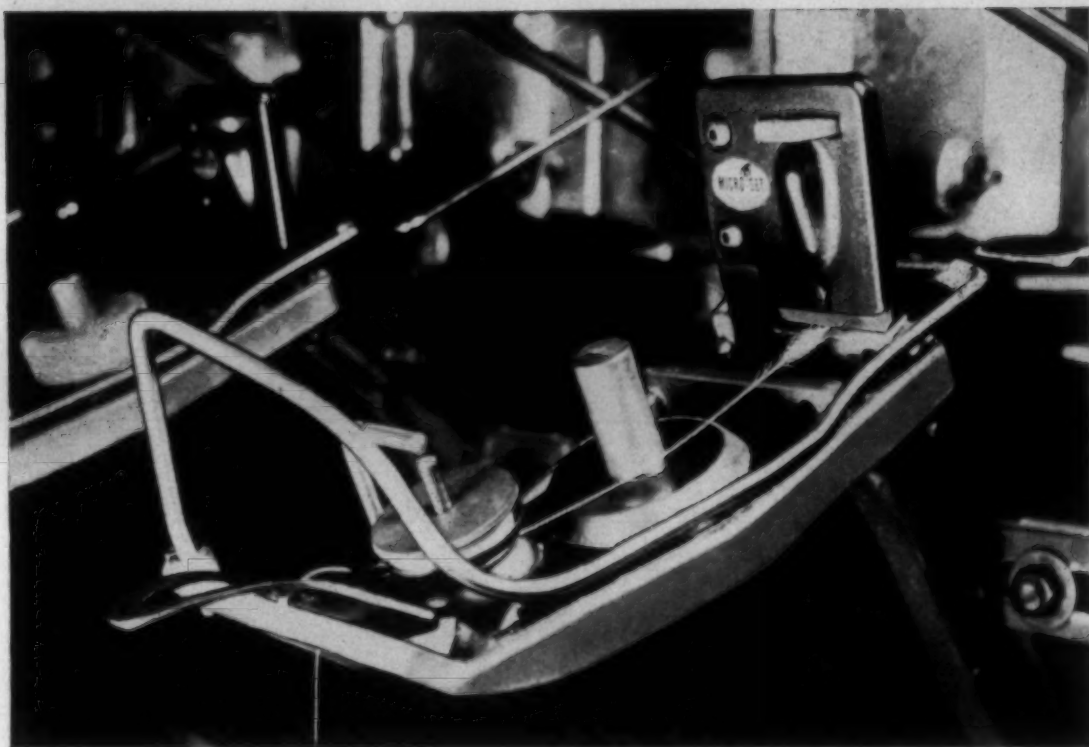
Southern Plants: Atlanta, Ga., and Gastonia, N. C.

*Direct Representation in Canada*

### TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plants • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains





## Here's a Roto-Coner® feature that assures highest quality yarn

*The micro-set slub catcher adds positive, precision-inspection*

A typical development of Leesona engineering the Micro-Set Slub Catcher on the Roto-Coner Winder clears soft torpedo slubs, hard slubs, piecings and double spinings from natural or synthetic fibers.

Its extreme sensitivity allows effective slubbing with a wider opening. A sensitive, toggle-action blade swings against the anvil, effectively arresting the slub. This blade can be adjusted to extremely precise settings — up to 80 thousandths of an inch, to handle yarns ranging from fine to coarse counts.

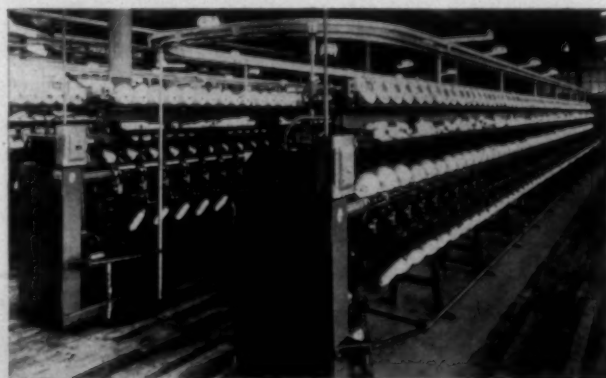
### Other Roto-Coner Advantages

Operator's duties have been reduced to the simplest, easiest motions. And the quick-doffing arbors save additional time in donning and doffing dye packages.

The smooth action of the famous Rotary Traverse — plus the Roto-Coner's streamlined design — allows little lint to form or collect.

Reciprocating parts are completely eliminated — no traverse cams to grease, adjust or replace. Users report annual costs for repair parts averaging as low as  $\frac{1}{4}$  of 1% of the original investment.

Roto-Coner Winders wind cotton, wool, worsted, spun synthetics or blends. It will pay you to get further facts on how these quiet, easy-to-operate, trouble-free machines can improve your product quality and cut your production time and costs. Write for illustrated bulletin.



One Of Many Roto-Coner Installations. Units can be built in various lengths to meet production requirements.



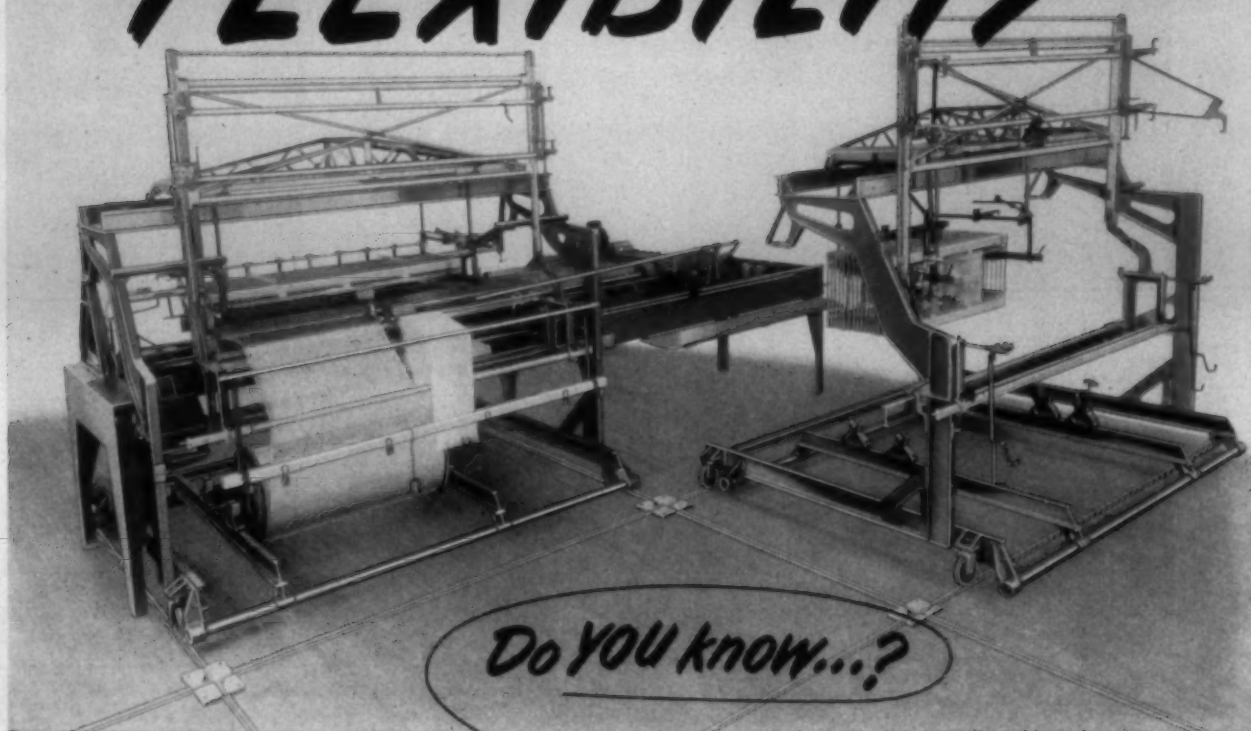
## UNIVERSAL WINDING COMPANY

P. O. Box 1605, Providence 1, Rhode Island

Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles • Montreal, Hamilton, Canada  
Manchester, England • Paris, France • Basle, Switzerland

Agents in every principal textile center throughout the world  
Winding and Twisting Machinery for Natural and Synthetic Yarns

# FLEXIBILITY



**BARBER-COLMAN**

## WARP DRAWING MACHINE



- That these machines will draw a range from 15 denier to 350, or the equivalent in other counts.
- That style changes are *easily* made.
- That you can vary the materials being drawn with *no time lost*.
- That varying the width of warp involves *no* mechanical changes.
- That heddle frame lengths may vary.
- That a machine will accommodate heddles from 11" to 17" deep.
- That beams up to 32" head can be handled.
- That while one warp is drawing, you can be loading or unloading others.
- That a machine will draw from flat sheet or leased warp, two of either or any combination.

**AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES**

**BARBER-COLMAN COMPANY**

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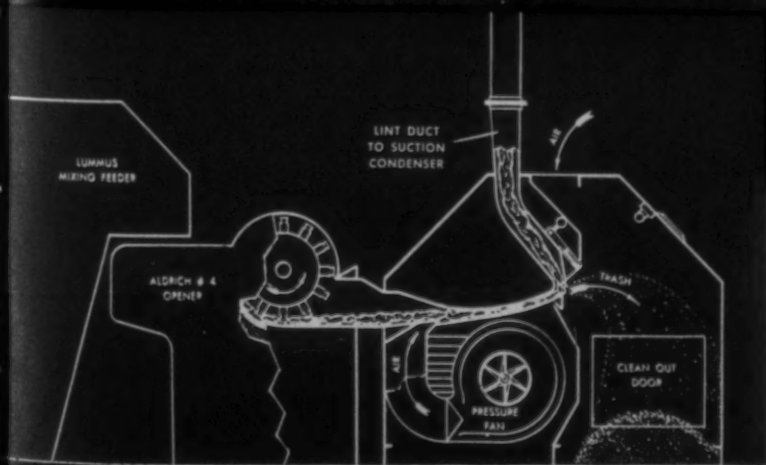
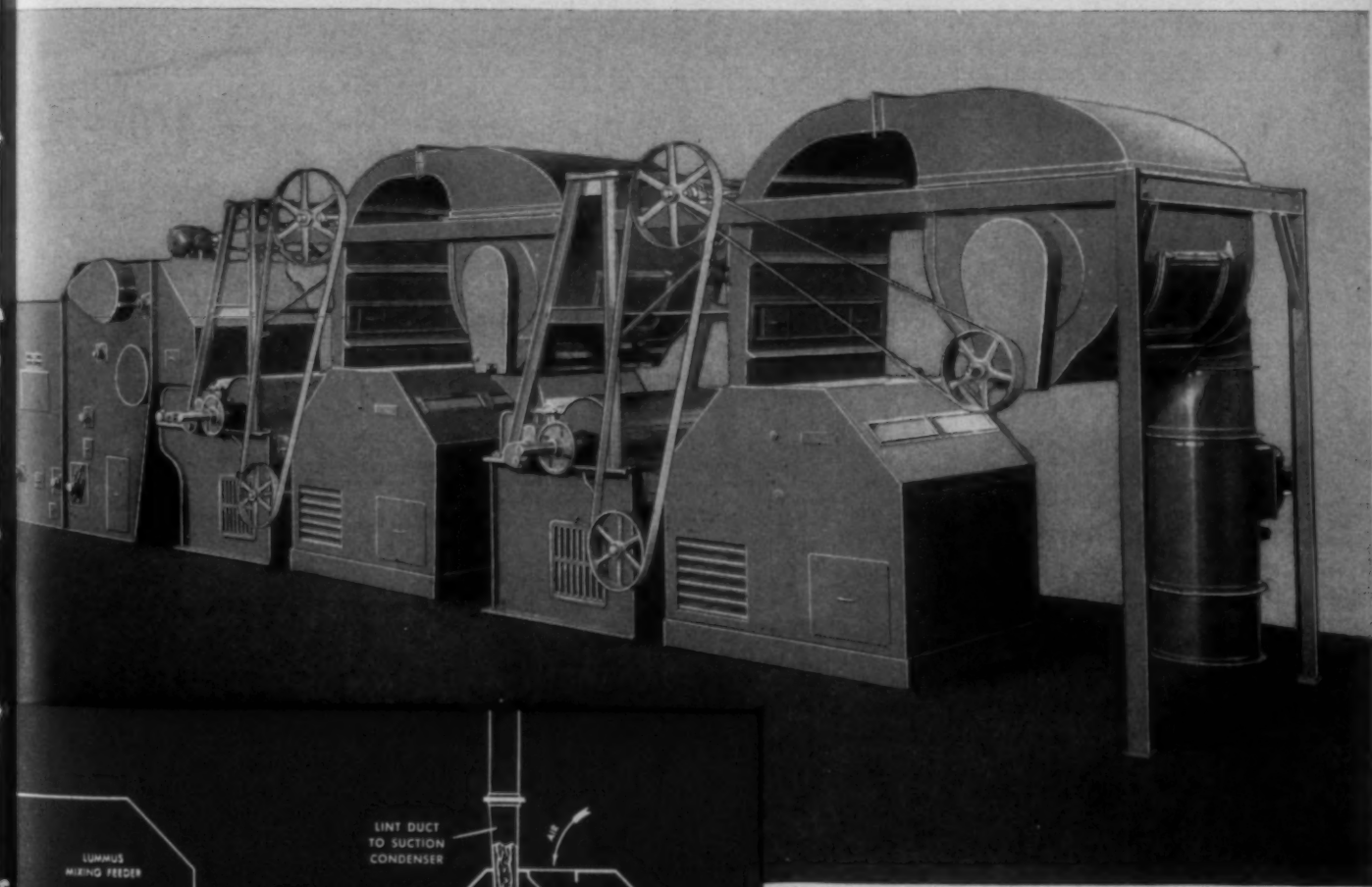
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**JAPAN**

Nippu Trading Co., Ltd.  
Toa Koshin Bldg.  
3-Chome Kitahama Higashiku  
Osaka, Japan

To clean cotton it is desirable to take trash *out whole*. Merely breaking it up so fine that it is not noticeable in the sample will not keep it from showing in the yarn.

The *Super-Jet Cotton Cleaner* contains no saws or pin beaters to break up the trash to make neps and pepper. It cleans with air currents, and can not injure the lint or pulverize the foreign matter.



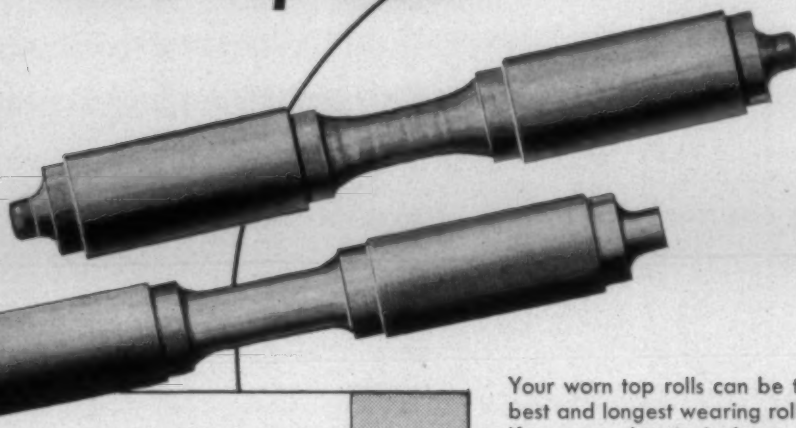
**If you have not seen these machines in operation, we would like to show them to you.**

## ALDRICH-LUMMUS CLEANING SYSTEM

Made by **ALDRICH-LUMMUS CO.** **Super-Jet Cotton Cleaner**  
**ALDRICH-LUMMUS CO.** **Super-Jet Cotton Cleaner**



# Don't Junk Worn Top Rolls



Ideal Specialloy surfaces have a cushioning action . . . tough—but oh so gentle . . . on saddles and cap bars.

## RETAINS OIL

Case hardened steel surfaces reject oil. Require daily oiling. Ideal Specialloy porous surfaces absorb oil and hold from 2 to 4 weeks oil supply.

## NO OIL SPOTS

The oil stays on the Specialloy bearing parts and off of the yarn. Oil seconds are practically eliminated.

Your worn top rolls can be the basis for the best and longest wearing rolls you ever used. If you are skeptical about our "better-than-new" claims for Ideal Specialloy Reconditioned Top Rolls, here are some things we can prove.

## Goes Weeks Without Attention



## SPECIALLOY SAVES MONEY

Specialloy Reconditioning means longer life for top roll assemblies, less oiling labor, and sharply reduced seconds . . . a worthwhile net saving to you.

Don't junk your worn top rolls. Let us show you why Specialloy Reconditioning will give you the best top rolls obtainable. Let us recondition a half dozen of your worn rolls to prove our claims.

**Ideal Machine Shops, Inc.**

**Bessemer City, N. C.**

**Continuous Service to Textile Mills Since 1924**

# ADVERTISE

... as you **PROTECT!**



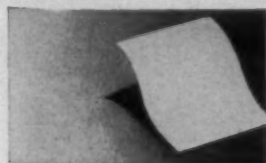
## PRINTED SEALING TAPES

*by Henley*

However you package your product, it can have a distinct advertising value PLUS protection against pilferage when you select a printed sealing tape by HENLEY. Here is tape that seals instantly and holds on despite rough transportation handling.

We can supply a tape to fit your specific needs—printed to your own design—or our art department would be glad to submit suggestions. We offer you—

PLAIN OR PRINTED KRAFT TAPES — CELLULOSE TAPES (TRANSPARENT AND IN COLOR) — CLOTH TAPE — REINFORCED TAPE — WATERPROOF AND SPECIALTY TAPES — SEALING TAPE MACHINES, Too.



# HENLEY

## PAPER COMPANY

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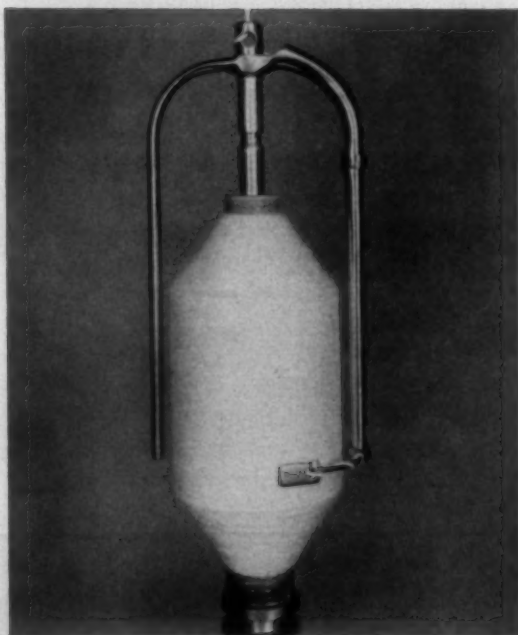
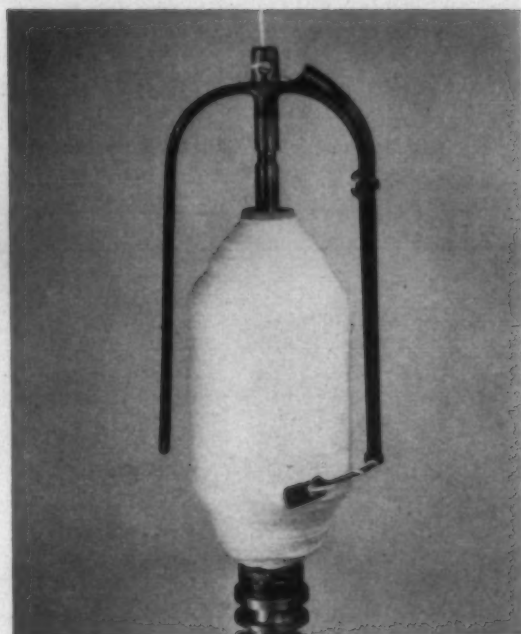
ASHEVILLE  
745 Biltmore Ave.

ATLANTA  
10 Produce Row

# watch

## for this danger signal!

When you see tangled bobbins and frequent ends down . . . that's your danger signal! Worn pins, barrels and spindle tops slow production—cost you money. Rusty, burred flyers out of balance add to production costs. Step up your production. Let Norlander-Young rebuild and dynamically balance your spindles and flyers.



Your production line will hum after Norlander-Young rebuilds your flyers and spindles. Our experts will prove to you that precision workmanship and years of experience pay big dividends in higher production.

Norlander-Young has all flyer finishes . . . Black, Cadum, Nylize and Burnish . . . whichever you prefer. We will give you the finest workmanship and the quickest service in the business. Your spindles and flyers will not only look new . . . when Norlander-Young rebuilds them . . . they are as good as new!

THE SYMBOL OF  SERVICE AND QUALITY  
**norlander-young machine company**  
 YORK ROAD, GASTONIA, NORTH CAROLINA, TELEPHONE 8556

**FLUTED ROLLS FOR SPINNING • FLYER FRAMES • COMBERS • DRAWING & LAP MACHINES**





# CARDING IS THE FOUNDATION FOR QUALITY

NO. 15

## Tips on Maintenance of Woolen and Worsted Cards

### Importance of Proper Maintenance

Depending on the quality of the maintenance program in effect, a woolen mill can either sustain greater losses or conversely make greater savings in the carding than in any other department. With proper card maintenance, high quality roving will be produced capable of being spun into quality yarn at minimum cost.

### Proper Routine is Essential

Schedules for the grinding, stripping and setting of the cards should be maintained to prevent unnecessary loss in production, poor roving and damage to card wire.

1. An adequate grinding schedule will be determined by the type and condition of the stock being processed, number of pounds per hour put through the card and any damage that might have been sustained by the card clothing due to facing, jams, etc., since last grinding or inspection. Correct grinding is essential to good carding and is one of the determining factors in the production of quality yarns.
2. A basic principal in the production of quality roving is that different classes of wool require different settings from breaker to finisher card and a change in stock may readily mean a change in settings. A periodic check of the settings should be made by one who has been instructed as to what constitutes the proper settings of the individual rolls on the card.
3. As in grinding, the stock being run will determine how often the card should be stripped. Failure to strip often enough will cause damage to the card wire and poor roving. Improper stripping, i.e., negligence on part of the strippers to clean feed rolls, lickerins, etc. will also result in damage to the wire and poor carding.

### Card Inspection

As with any other piece of machinery, it is necessary to maintain a continual check on the mechanical condition of the cards.

1. When the card is stopped for grinding, always check the level and alignment of the card, look for worn bearings, gears, shafts out of true, broken parts, etc. In addition to an adequate supply of card clothing, emery fillet, etc., it is a good idea to maintain a small inventory of miscellaneous spare parts for the card, thus reducing "down time" if an accident should occur.
2. Strippers should be instructed to clean clogged gears, chains, etc., and to remove excessive fly which accumulates on the card. The stripping and maintenance of the metallic breast is essential to good carding and must not be overlooked whenever the cards are stopped for stripping.
3. Periodic checks on the oiling of the card should be made to see if instructions, in regard to proper lubrication, are being followed. Without sufficient lubrication, extreme wear will occur and serious breakdowns may be the result. At the same time, all belt tensions should be checked, as belt slippage is often one of the causes for poor and uneven roving. Excessive belt tension will cause bearings to over-heat which naturally results in abnormal wear.
4. The following equipment used to maintain card room operations should be checked periodically.
  - a. Traverse Grinders — emery fillet, etc.
  - b. Clothing Machine — step cone pulleys and tension box surfaces should be smooth and even. Tension scale should be recalibrated when necessary.
  - c. Bent or worn card gauges should be replaced.

**Summary:** An adequate and effective maintenance program is essential in the running of an efficient card room and the production of quality roving.

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*please turn the page* ♦

# Platt's Metallic Wire for COTTON or WORSTED CARDS

Sold by

*Ashworth*

**Offers  
3 POINT  
PROFIT  
PROGRAM**

Platt's Metallic Wire for your cards, in place of flexible card clothing, is suitable for certain classes of work on cotton, worsted or synthetic fibre cards. Its suitability for YOUR purposes should be determined by consultation with us.

It offers the following 3 point profit program:

- ① Increased production.
- ② Marked decrease in stripping.
- ③ Elimination of grinding.

*Let us analyze your carding problem to see if Platt's metallic wire for your cards will make money for you.*



## ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River\*†‡ Worcester‡ Philadelphia\*†‡ Atlanta†‡ Greenville\*†‡

Charlotte†‡ Dallas†‡ (Textile Supply Co.)

\*Factory †Repair Shop ‡Distributing Point

**3 Factories • 6 Repair Shops • 7 Distributing Points**

### PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.

# For the Textile Industry's Use

## — NEW MACHINERY, EQUIPMENT AND SUPPLIES —

### Hart Surfactant

Procol PW, a condensation product of degraded protein and fatty acid, has been developed by Hart Products Corp. Said to be odorless, light-colored and of maximum efficiency, Procol PW is obtained through highly purifying the condensation product. The new surfactant is said to combine excellent protein-inherent protective and dispersing properties with soap-inherent detergent capacities, without producing the disadvantages usually associated with soap. Procol PW is reportedly stable to bleaching powder, hypochlorite and peroxide solutions, and can be used in such solutions to give controlled bleaching action. As a result, bleached fabrics showing greater tensile strength may be obtained with the new detergent, Hart points out. Procol PW is well suited for vat, naphthol and acetate dyeing because of its high dispersing level.

(Request Item No. C-1)

### Rando-Feeder And Webber

Curlator Corp. announces a new and improved Model 40-B Rando-Feeder and Rando-Webber. The company reports that the new Rando-Feeder has a constant output rate from full hopper to almost empty and requires less attention by the operator. Several major improvements in the new model, as cited by Curlator, are: (1) the enlarged hopper has full 40-cu. ft. capacity; (2) the new floor apron gives even pressure of fiber on elevating apron with speed readily adjustable; (3) the new stripper apron returns excess fibers to rear of hopper thus preventing jamming at the elevating apron (there is no feeler plate or start-stop action); (4) new rotary condenser screen box eliminates screen belts; (5) improved selective output control is unaffected by wide variations in hopper level.

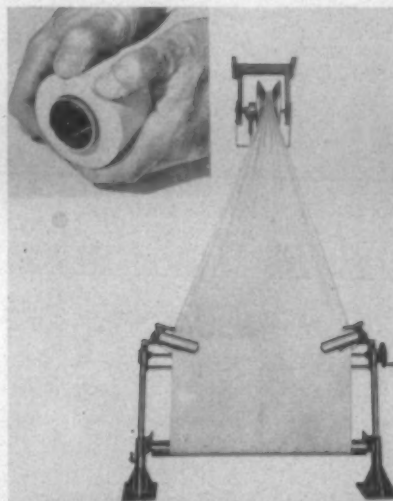
The Rando-Webber has also been com-

pletely redesigned, but incorporates the same principles and functions of the original machine. The performance is said to be improved in both random webs and output efficiency. Maintenance is also minimized by use of heavier motors and drives, plus locating them where they are readily accessible. The Rando-Feeder and Rando-Webber are available in 3 sizes—40", 60" and 84".

(Request Item No. C-2)

### Mount Hope Guider Roll

A new and improved guider roll that provides a more positive grip on fabrics and is far more durable than any other type now available has been announced by Mount Hope Machinery Co. Key to the success of the new roll is MH-31, the rubber-like material of which the roll itself is made. Specially formulated for the job by the Mount Hope research staff, MH-31 is much softer than previous materials and as a result makes rolls that hold fabrics tenaciously with only light pressure applied. The elimination of excessive pressures means that even delicate fabrics such as light rayons, marquisettes, lace and gauze may be opened or guided without danger of fraying. An indication of the exceptionally positive gripping power of the new rolls has been demonstrated in a large mill where sheeting up to 120" is being opened horizontally at high speeds without ever losing cloth from the nip. Equally important, use of the new Mount Hope guider roll in new installations of this type completely eliminates the scutcher with a resultant net equipment saving of \$1,100 and more. In plants where scutchers, already in use, are replaced with Mount Hope opening equipment using the new guider rolls, elimination of damaged goods alone results in savings that normally will more than repay the cost of the new equipment in just

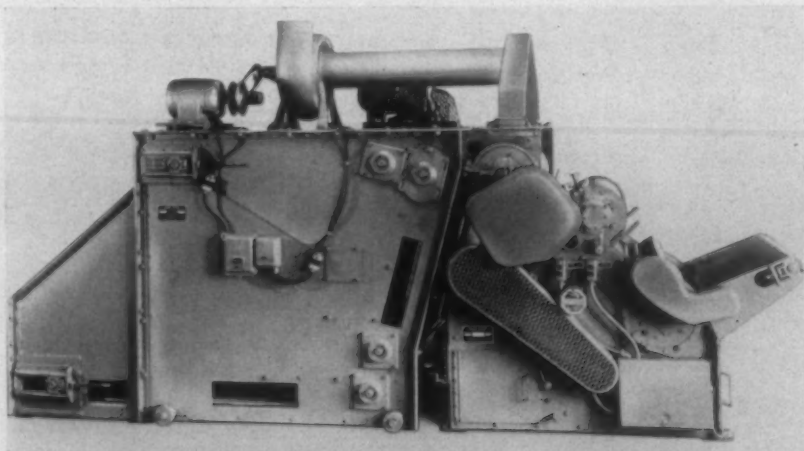


MH-31 guider rolls used on typical cloth opening application. Inset indicates softness of the rolls (Mount Hope Machinery Co.)

a few months. Even though the new roll is far softer than previous models, it is said to be exceptionally durable. A set of test rolls, in continuous operation for more than 7 months under actual production conditions, have shown no noticeable wear. The new guider roll is now being included as standard equipment on all applicable Mount Hope devices. In addition, individual rolls are also available as replacement equipment for earlier Mount Hope machines or for improvement of other makes of cloth handling devices. (Request Item No. C-3)

### Operating Features Of Draper's XP-2 90" Wide Sheeting Loom

Draper Corp. recently has made known detailed features of its new XP-2 90" wide sheeting loom, which was on display at the recent Southern Textile Exposition. At Greenville the loom operated at a speed of 142 picks per minute while weaving 90x94 sheeting—32s warp and 40s filling—which is 20% faster than average sheeting looms now in operation. Although increase in production was the prime objective of Draper engineers in designing this new loom, simplicity of loom operation and ease of loom fixing were taken into consideration. The new sheeting loom has been designed so that the camshaft is in a lowered position to permit the use of a larger one-piece cam. This new cam imparts a gradual acceleration to the shuttle, permitting greater shuttle flight control, easier boxing and reduced wear on pick motion parts. The lowered position of the camshaft, together with strengthened loom sides and extra heavy bracing construction throughout, reduces loom vibration. Four camshaft center boxes



Model 40-B Rando-Feeder and Rando-Webber (Curlator Corp.)



#### FOR THE TEXTILE INDUSTRY'S USE—

and middle girts are used in this 90" loom construction. All large fitting surfaces on the loom sides are either milled or broached. This permits more accurate assembly of related parts and reduces the possibility of assemblies becoming loose or out of alignment.

The loom's conventional pick motion has pick shafts made from ductile iron which is a high tensile iron considerably stronger than that regularly used in pick shafts. Pick shaft bearings are ball and socket type. This loom is equipped with a No. 6 Draper-Diehl power transmitter which has motor, brake and clutch combined in one unit. Incorporated with this drive is a posi-

tive frog knock-off from the right-hand end. The drive, together with this knock-off arrangement, allows quick starts and positive braking action. Simple and compact, the application of this transmitter eliminates many conventional parts, reduces maintenance costs and permits easier handling of the loom.

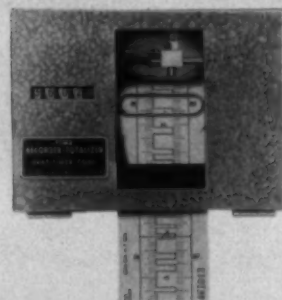
Anti-friction bearings can be furnished in many locations on this loom if desired, but on the exposition loom they were incorporated as follows: treadle rolls, treadles, take-up roll, pillow block bearings for harness roll shafts, yarn beam bearings, vibrating whip roll, whip roll arms, whip roll shaft bearings, rocker shaft bearings, pick ball, filling cam follower hub, protector rod center bearing, bobbin disc and transferer.

These all are designed to contribute to smooth loom operation, higher speeds and reduced parts wear. Included in the construction of this loom is the new, adjustable 6-bank K.A. electric warp stop motion (cotton type) which is similar in design to that used on other X-series looms. This warp stop motion may be raised, lowered or tilted to suit weaving conditions.

The demand for larger packages is met with larger yarn beams and bobbins. Using a 26" diameter beam, a reasonable loom depth of 64 1/8" has been maintained. Operating with a shuttle 18 1/2" long x 2 1/16" wide, a 10 1/8" bobbin can be accommodated, if desired, on special weaves. Cloth on the cloth roll may have a maximum diameter of 15".

Many of the newer Draper mechanisms have been adapted to the new XP-2 loom. A new No. 30 push-type knock-off, operating by a direct push rather than by impact, is said to give a smoother, easier action. A simplified No. 25 Stafford thread cutter, with 20 fewer parts in its assembly, allows easier adjustment and maintenance of settings. An improved positive pull-down construction for the harnesses, along with treadles with needle bearings and Heim end connections, gives certain and smooth operation. (Request Item No. C-4)

#### Time Recorder+Totalizer

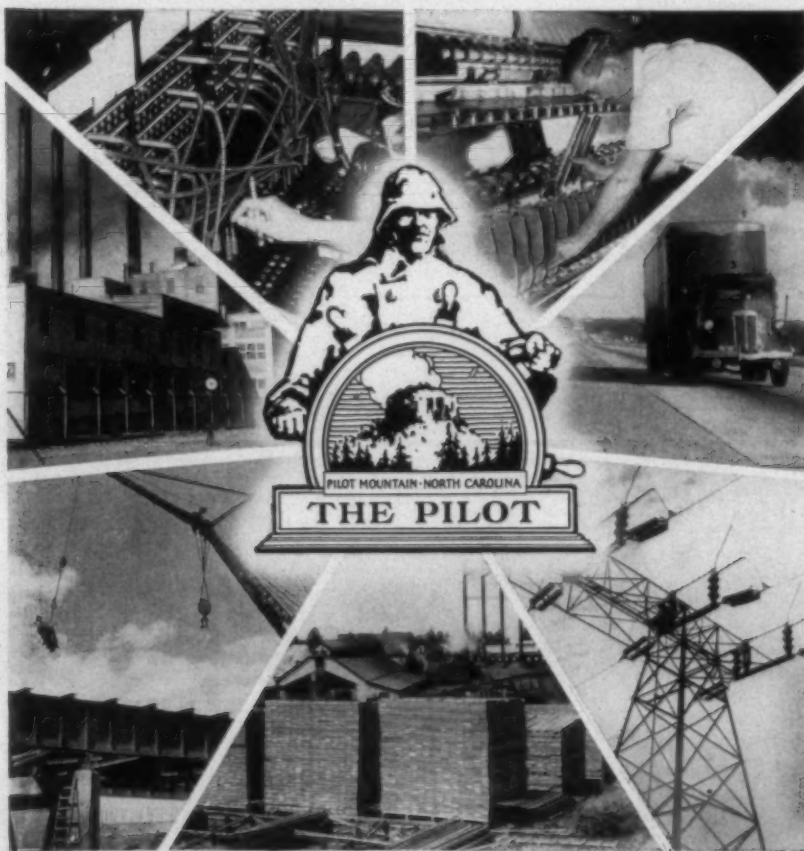


Time Recorder+Totalizer (Heat-Timer Corp.)

The Heat-Timer Corp. introduces the Time Recorder+Totalizer, which provide a continuous operation record of any electrically operated machine or process. Chronologically marked tape, from a large roll, continuously passes through this instrument recording the time and length of every "on" and "off" period of the equipment. An additional feature is the totalizer, which gives a total of the complete "on" time of the equipment—valuable information for determining servicing schedules and parts replacement. According to the manufacturer, it can either be installed as an integral part of the equipment, as a remote installation or as a portable tool. Standard tape speeds available are 1" per 5 min.; 1" per 15 min.; 1" per hour. 115/220 v.a.c., 60 cy. 30. (Request Item No. C-5)

#### Celanese Industrial Fiber

Celanese Corp. of America before the end of 1955 will begin full-scale commercial production of Fiber X-36, a super-strong industrial fiber which has been under development and evaluation for the last



### The Pilot works with management — building business by protecting workers!

From the telephone switchboard to the textile mill the protective arms of The Pilot cover all phases of Southern industry. Individually tailored group insurance programs stimulate profits and production by improving employee relations, reducing labor turnover, and attracting competent help.

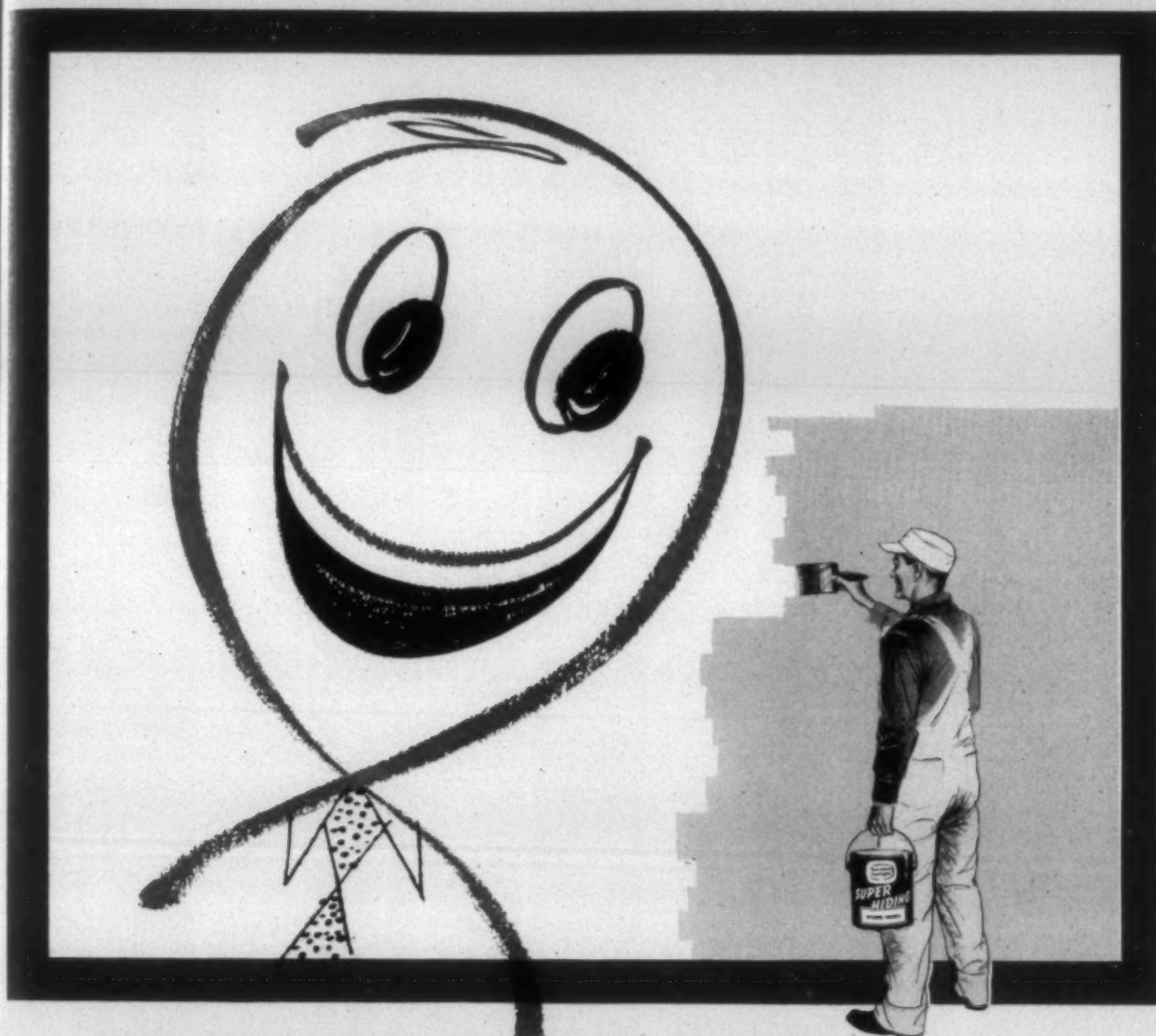


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GROUP DIVISION • GREENSBORO, NORTH CAROLINA

PILOT TO PROTECTION SINCE 1903 • O. F. STAFFORD, PRESIDENT



## If Walls Could Talk

If walls could talk, here's what they'd say:

"The paint that saves you the most money is not the one that costs the least. It's the paint that covers the most area per dollar. It's the paint that covers the most area per hour. And it's the paint that keeps its 'fresh-painted look' the longest."

The walls in plants of leading names in industry would tell you that famous Barreled Sunlight *Super Hiding*\* Interior Finishes meet these true money-saving requirements better than any other paints. These leading plants specify and insist on Barreled Sunlight because it takes up to a full gallon of thinner for every five of paint. They stick with Barreled Sunlight because it cuts labor costs — which today are at least 80% of total painting costs. And they swear by Barreled Sunlight because it looks better longer — has to be repainted far less often.

Treat your walls to the magic of Barreled Sunlight *Super Hiding*\* Interior Finishes. Try the "on-the-wall" test against what you are now using — then look and listen. You'll see plenty, and you'll hear plenty, for when it comes to paint, walls can talk—AND DO!

Write for free catalog today. Barreled Sunlight Paint Co., 5-C Dudley St., Providence 1, Rhode Island.



## Barreled Sunlight

\*Reg. U. S. Patent Office

In whitest white or clean, clear, wanted colors, there's a Barreled Sunlight Paint for every job

## FOR THE TEXTILE INDUSTRY'S USE—

4 years, Harold Blancke, president, announced recently. Equipment and machinery are now on order for the operation which will be located at the Rome, Ga., fiber manufacturing plant of the company.

"Although a chemical brother to Fortisan, the regenerated cellulose yarn which Celanese launched in 1940," Mr. Blancke said, "Fiber X-36 is made by an entirely new and different process developed specifically for the production of the heavy deniers required in industrial applications. The product will be marketed as Fortisan-36 in continuous filament form, and at the outset will be available in 800-denier continuous

filament. Other sizes in the heavy denier ranges may be produced. It is anticipated that Fortisan-36 production will get under way early in the final quarter of the year. Until that time some sample quantities from present pilot operations will be available.

"In the process of appraising the market opportunities for Fortisan-36, the fiber has been evaluated by a wide number of corporations operating in various fields. Reports from these consumers indicate a bright potential for the material due to its properties of great strength, low elongation and dimensional stability. Broadly, the new product tends to fill a gap which now exists between high-tenacity rayon on one side and glass fiber and industrial steel wire on the other." (Request Item No. C-6)

## SERVING THE TEXTILE INDUSTRY FROM MAINE TO TEXAS

# YOUR JOB IS MAKING YARN OUR JOB IS TO HELP YOU MAKE THE BEST YARN AT THE LOWEST COST

How well we do it is evidenced by the many improvements Jenkins has engineered in spinning cylinders and card screens during the past forty years.

Jenkins was first with the now famous Dynamically Balanced Cylinder that did so much to improve yarn quality on today's high speed frames. By reducing vibration to the vanishing point, these cylinders not only run smoother and longer; they lower over-all production costs by greatly reducing wear on all moving parts.

And remember, your tests are invited on Jenkins Cylinders. They are *positively guaranteed* as represented.

You can benefit from our modern facilities and specialized know-how immediately, because you pay no more for Jenkins superior cylinders and card screens.

# JENKINS

**QUALIFIED ENGINEERING**  
**METAL SHOPS, INC., GASTONIA, N. C.**

**40 YEARS CONTINUOUS SERVICE TO THE TEXTILE INDUSTRY**

## Overload Protective Device

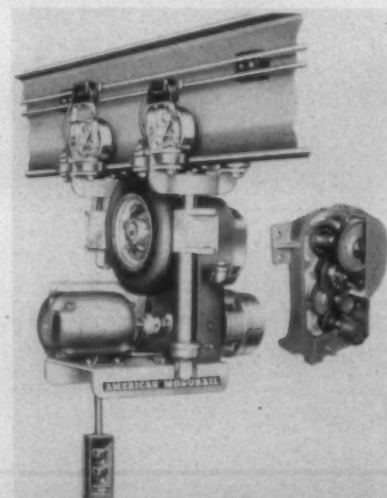


**Tork-O-Stat overload protective coupling (Machine Accessories)**

A new overload protective coupling called Tork-O-Stat has been announced by Machine Accessories. According to the manufacturer, Tork-O-Stat safeguards against costly breakdowns of machines with the resulting loss of production time and expensive material damage. The device is used between any drive shaft and a driven shaft. When the torque rating of the Tork-O-Stat is exceeded, internal parts are disengaged and a complete disconnection results. When the overload, or cause of jamming, is removed, the Tork-O-Stat will re-engage and resume normal drive automatically. The device is only 4 1/4" dia. by 1 5/16" thickness and weighs only 1/2 lb. Said to be easy to install, it is tamperproof and needs no lubrication. Models are now available with torque ratings of 10, 20, 40 and 60 in./lbs., with their equivalent horsepower ratings dependent entirely upon the speeds used.

(Request Item No. C-7)

## MonoRail Drive Unit



**Drive unit for monorail track or crane bridge (American MonoRail Co.)**

To propel a hoist or other type carrier on monorail track or crane bridge, the American MonoRail Co. offers a new precision built drive unit. The company points out that traction is obtained by spring-loaded contact of the rubber wheel against the bottom of any smooth flange track. The new unit contains the following advantages—duty-rated lift-time helical gearing; speed range from 35 to 350 f.p.m.; power range from 1/4 to 2 h.p.; can use any standard N.E.M.A. frame motor; can apply any type



# NON-YELLOWING

## LUPOMIN NY

*A new, more effective ammonium quaternary compound,  
with antistatic properties,  
for softening and finishing textiles*

Newly improved Lupomin NY is a superior softening agent for a wide range of fabrics—white stays white—no after yellowing even at high temperatures. On dyed materials, shades do not change and are brighter. Very small quantities of Lupomin NY give a soft, smooth, supple hand, and odorless finish. In paste form, Lupomin NY is just as effective in a neutral or acid bath—it mixes well with gelatin, gums, starches and dextrines.

Complete data proving the versatility of Lupomin NY as well as a sample for a test run may be had by writing:



**JACQUES WOLF & CO.**  
*Chemicals* PASSAIC, N. J.

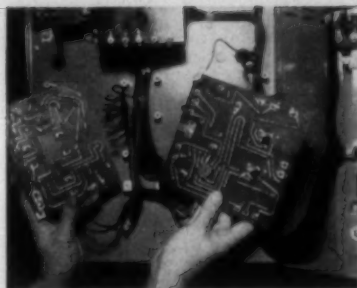
Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

#### FOR THE TEXTILE INDUSTRY'S USE—

motor brake; automatic adjustment for tire wear; available with fluid drive for cushioned start; and can operate on any smooth flat flange track. These advantages, the company points out, indicate the universal application of the new unit to meet any type of automatic or power-propelled load transfer on a monorail system. It meets all the requirements for constant service, exact delivery cycles, grade travel or the movement of loads up to 5 tons with power consumption and maintenance held to a minimum. (Request Item No. C-8)

#### Adjustable-Speed Drives

Printed circuitry and a new, simplified control system are features of a new line of full-wave Thy-mo-trol electronic adjustable-speed drives, available at prices approximately 20% lower than for previous models of the same type, according to the specialty control department of the General Electric Co. Believed to be the first printed circuitry ever to be incorporated in industrial control equipment, the print-board panels can be visually inspected for circuit faults, G-E engineers said, since the panels are actually current-carrying diagrams. The panels can also be removed and replaced in a few seconds time, they said. Since the new control circuit uses only a single miniature-type control tube, as contrasted with 3 conventional sized tubes in previous models,



Printed circuitry Thy-mo-trol electronic adjustable-speed drives (General Electric Co.)

maintenance on the equipment is greatly simplified.

The new design has isolated a.c. control circuits that allow interconnection with a.c. drives without the use of additional relays. Power tube capacity is at least 40% greater than the full load current of the motor with which it is normally used, they explained, providing ample margin for overload and assuring longer tube life. The new design is available in two ratings,  $\frac{3}{4}$  to 1 h.p., and  $1\frac{1}{2}$  to 3 h. p. full wave. Basically an automatic electronic control for d.c. motor drives, the new Thy-mo-trol controls are designed to give stepless speed control from an a.c. power source over an 8 to 1 speed range, with higher speed ranges possible for special applications. Consisting of electronic sensing elements and an elec-

tronic power rectifier, it maintains very close speed regulation regardless of changes in load or line voltage, and limits starting torque to protect both drive and machine against overloads at all times. Optional features available at extra cost as part of the Thy-mo-trol control line include push-button reversing, reactor loop control, jogging and tachometer follower operation. Other Thy-mo-trol drives, with conventional circuitry, are available in full or half-wave models up to  $\frac{1}{2}$  h.p.

(Request Item No. C-9)

#### Splicing Cements

New tinted and high-temperature splicing cements for the textile field have been announced by the Pioneer Latex and Chemical Co. According to Pioneer, Tinted Splic-It and Splic-It C, 2 completely new products of the Splic-It line, have been designed to meet customers' special problems and offer greater coverage to the textile industry. Splic-It is a neutral color ready-to-use cement for quickly splicing yarn ends without using knots. Tinted Splic-It has been designed for use with pre-dyed yarns where invisible color splices are desired. This modified Splic-It product is colored to standard shades of red, green, blue, gold, brown, black and white. Individual shades can be matched on special order. Splic-It C is designed for use where high-temperature processing conditions exist. Laboratory tests show it to effectively resist all stiffening,

# Nutting

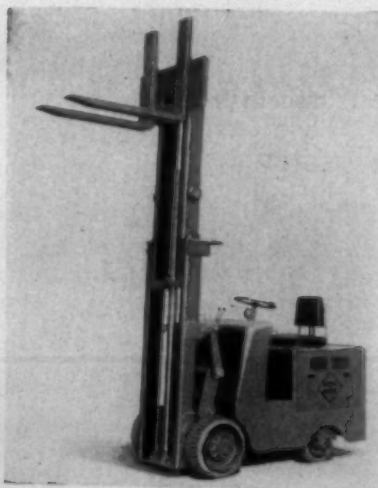
TRUCKS



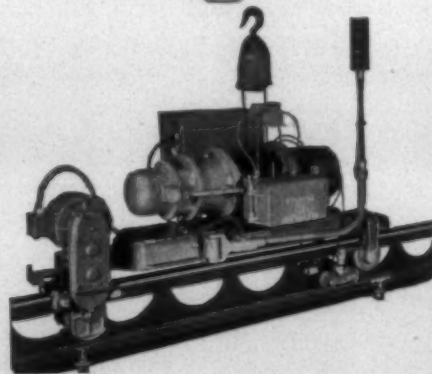
BARRETT  
HANDLING  
EQUIPMENT



ELWELL-PARKER  
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# Standard

GRAVITY & POWER  
CONVEYORS

OUR STORAGE EQUIPMENT LINES INCLUDE AMERICAN BOLTLESS PALLET RACKS, DELUXE STEEL SHELVING AND ALL-STEEL LOCKERS

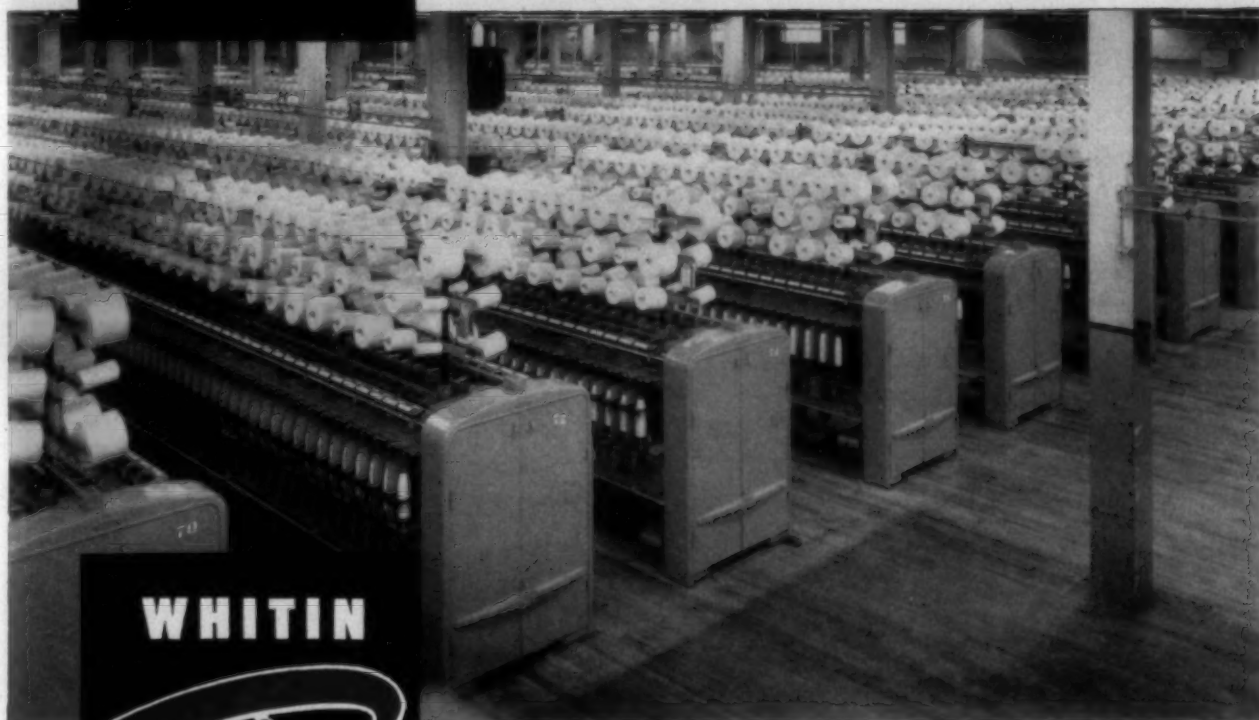
## ENGINEERING SALES COMPANY

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Serving the Carolinas Since 1932

NORTH CAROLINA



# WHITIN *Pacemaker* TWISTERS

*Mill installation of Whitin  
Pacemaker Twisters*

**...they lead the field in Production,  
Performance and Quality**

Whitin Pacemaker Twisters have established unsurpassed performance records for their high production, quality of yarn, minimum maintenance and operating costs. For cotton and spun synthetic yarns, they are available in 3"-6" gauge, with traverses up to 9", 2½"-4½" rings. Their notable features are:

- Front bottom roll arrangement to provide a yarn path that is in almost vertical line from bottom of front roll to the guide.
- Laminated bakelite gears meshing with metal gears in the head end, for noise reduction and long wear.
- Spring counterbalanced ring rail.
- Spring weighted anti-friction tape tension pulleys.

## Also available

- Steel pulleys on continuous drive shaft for spindle drive.
- Slotted ring rails for full length stationary separator blades.
- Stationary guide rod behind spindles for supporting ring rail traversing mechanism which prevents contamination of yarn when ends are down.
- Ball bearing or roller bearing spindles.

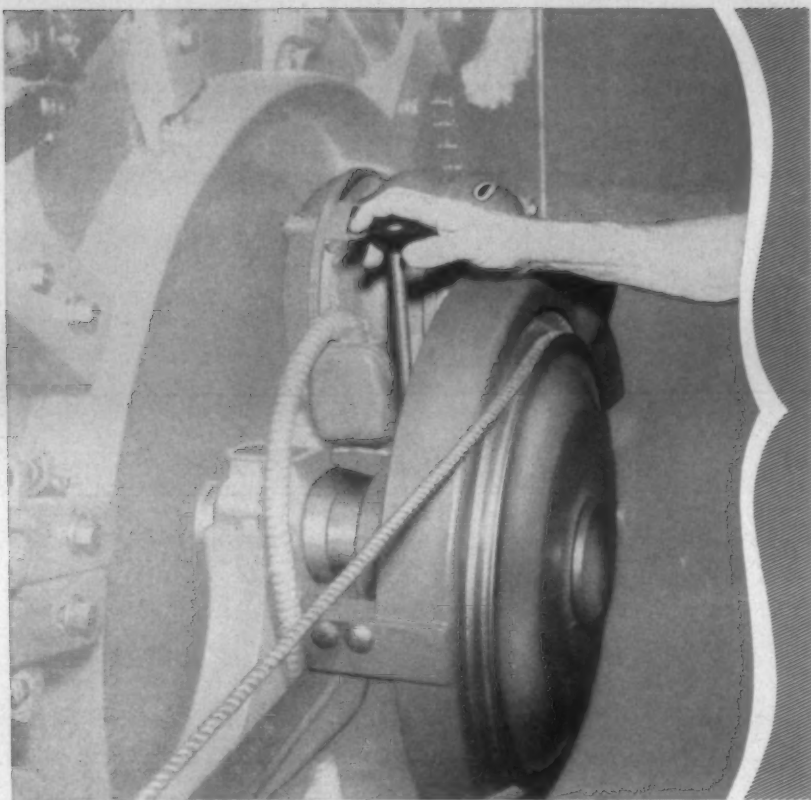
# Whitin

## MACHINE WORKS

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CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

*Write today for our folder  
giving detailed information*





## NO SEPARATE STRIPPING DEVICE OR CHANGES IN PROCEDURE WITH SOUTHERN STATES CARD DRIVES

There is no need to run the risk of costly accidents as a result of changes in operating methods when you install individual card drives in your mill. Southern States has eliminated that problem.

An exclusive feature—a standard-diameter, grooved pulley, built on the main drive—permits stripping in the usual manner. In every case where Southern States Individual Card Drives are used, mills report that stripping is simpler, quicker and safer.

The Southern States Card Drive is priced low enough to fully justify the elimination of old-fashioned lineshafting and belting with their well-known headaches. It is a packaged unit, quickly and easily installed. Mounts directly to card frame. No complicated reduction unit or overhung load on cylinder shaft. Occupies about the same space as a flat-belt drive. Leaves the flats clear and eliminates the danger of springing arches or damage to flats as a result of vibration.

Every month increasing numbers of Southern States Individual Card Drives are going into service. Let our representative show you how they can be made profitable for your mill.



**SOUTHERN STATES**

**EQUIPMENT CORP.**

HAMPTON, GEORGIA

### FOR THE TEXTILE INDUSTRY'S USE—

softening and weakening of the bond at above normal heat processing, it is said. Both products are reported to retain the same easy-to-use features of regular Splice-It, and are manufactured to rigid specifications assuring uniform quality and dependability. (Request Item No. C-10)

### Comfort Standing Mat



Neo-Sponge comfort mat (American Floor Products Co.)

American Floor Products Co. is offering a new industrial and commercial floor matting designed to reduce employee fatigue and injury. The product is called Neo-Sponge comfort mat and is made through a special patented process of blowing millions of inert nitrogen bubbles into Du Pont's Neoprene. Its outstanding properties are said to be permanent resilience, high electrical resistance (61,000 volts before puncture), and an almost impervious resistance to acid, oil, grease and heat. The mat reportedly will outwear any similar product made of rubber and, unlike rubber, will not absorb any liquid or vapor. It is designed to suit any type of business where employees stand at their jobs. The molded tread design on both sides makes it reversible and offers excellent non-slip foot traction. It is available in 2 thicknesses,  $\frac{1}{4}$ " and  $\frac{3}{8}$ ", and in standard sizes up to 36" wide x 10' long. Larger sizes can be supplied upon request. (Request Item No. C-11)

### Static Eliminator

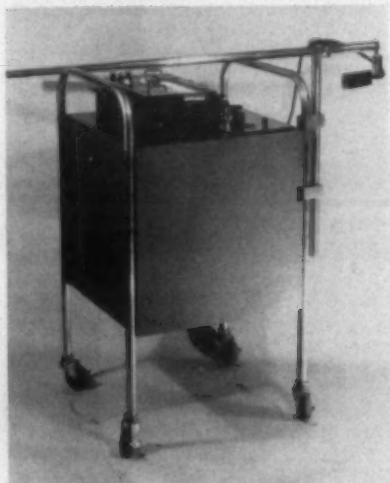
The Portland Co. has announced the availability of a new static eliminator for looms which is said to improve quality, reduce seconds and increase output. The Chapman static eliminator, Model A2-L, is electrically

#### FOR THE TEXTILE INDUSTRY'S USE—

operated and consists of a small power unit which energizes 1 or 2 inductor bars, as necessary, installed across the width of the loom. These inductor bars provide a constant field of ionized air from which the charged ends may pick up the required amount of positive or negative charges to neutralize themselves. According to the company, the use of the Chapman static eliminator on looms has been found advantageous in curing a number of static problems: (1) lint and dust which accumulates on drop wires or heddle is attracted to warp and woven into cloth causing heavy streaks; (2) yarn in the shuttle may be attracted to the loom causing looping or snagging; (3) ends or fibers repel each other causing static cracks; (4) warp ends may be attracted to adjacent ends when breaks occur causing stop motion to operate improperly; and (5) excessive moisture is no longer necessary to attempt to control static. The equipment is said to work equally well on wool, cotton, synthetics, plastics or blends.

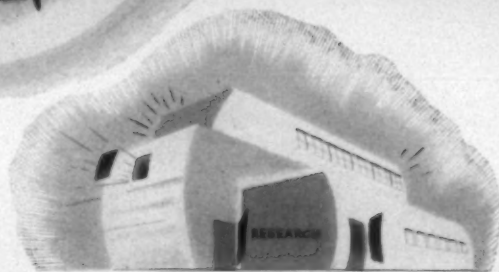
(Request Item No. C-12)

#### Tensiometer



Recording Tensiometer (Custom Scientific Instruments Inc.)

The high-speed recording Tensiometer developed by the Summit Research Laboratories of the Celanese Corp. of America for the measurement and proper regulation of yarn tension, is now a product of Custom Scientific Instruments Inc. The instrument has a frequency response up to 120 cycles per second and a sensitivity as high as 4 millimeters deflection on a standard direct writing recorder per gram of tension in the yarn. Even at this high sensitivity, the company points out, the instrument can be used under normal plant conditions. Heavy machine and plant vibrations have no effect on the Tensiometer, the record produced being a true record of tension variation only. The sensing head is described as compact and very rugged, with a beam type of transducer using bonded resistance strain gages. Stops are provided to prevent overstressing these beams, it is pointed out. Methacrylate plastic pulleys are provided to the beams and to use the instrument it is only necessary to place the pulleys over the running yarn and



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If you have a question like "How can we best apply this dextrine to our needs?" or "What can be done with starch to cut costs here or here?" or any other inquiry relating to the adaption of products from corn to your manufacturing process, contact us! All research and laboratory facilities of the Anheuser-Busch Corn Products Research Section will be placed at the disposal of your particular problem, without charge.

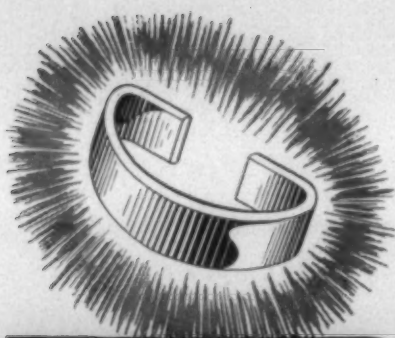
Why? . . . because Anheuser-Busch, Inc., is vitally concerned with the future research and development of corn derivatives and their application to daily life.

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CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S. C.

### FOR THE TEXTILE INDUSTRY'S USE—

twist the sensing head until the yarn forms an S shape over the pulleys.

(Request Item No. C-13)

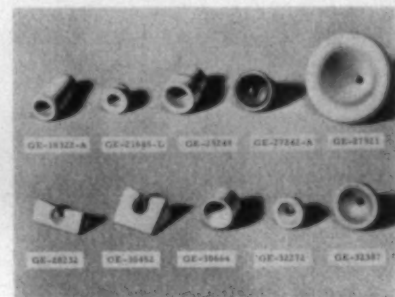
### 'Liquid Tile'

Ev-R-Shield Products Inc. is introducing a "liquid tile" called Glascote which reportedly bakes itself into a smooth, hard, waterproof surface when applied on walls, floors, concrete tank linings, etc. Made from a plastic resin produced by Reichhold Chemicals Inc., the product can be applied with brush, spray, roller or swab to plaster, sheet rock, concrete, brick, masonite, seasoned wood and fibreboard. The makers emphasize the fact that Glascote is not a paint or enamel but a thermal setting plastic. It actually sinks into and becomes part of the surface. A hardener mixed into it generates a low, safe heat which literally bakes it into a tile-hard finish. There is no known solvent for the finish it produces, the manufacturer reports. Boiling lye has been poured over it without ill effect. Actual tests reportedly show that such surfaces have greater wear resistance than steel. The product can be applied directly over water-mixed paints, although oil-base paints usually have to be removed because the baking action will blister them. Permanently damp walls will take Glascote if they are dried with Ev-R-Shield solvent or a blowtorch just before application, the com-

pany reports. The finish cannot be used on such non-porous materials as metal, porcelain and ceramic tile, it is pointed out. A gallon of the surfaces covers 300' to 400'.

(Request Item No. C-14)

### Trumpet Guides



AlSiMag trumpet guides and trumpet inserts (American Lava Corp.)

The Titania Division of American Lava Corp. reports that new AlSiMag trumpet guide and trumpet insert designs are on test by a number of leading mills. In general, these mills have reported that the new guides assist in maintaining uniform tension, increase sliver uniformity and materially reduced sliver breakage. The mills report, the division points out, that there is no sign of wear on the guides, even on those which have been in constant use for several months. Some of the guides on test are made of AlSiMag 192 (standard) and

## IMPORTANT MAINTENANCE ITEM IN ANY COTTON MILL

Superintendents who realize the worth of Orr Slasher Cloth swear by it. They realize that it

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WHAT'S NEW IN MOTOR CONTROL? ★ ★ ★ GET IT FIRST IN CUTLER-HAMMER

## New Combination Starters in the Spectacular Line of Cutler-Hammer ★ ★ ★ Motor Control

**C-H 9589 COMBINATION STARTER**  
Combines safety disconnect switch with motor starter in a single unit. NEMA 1 Enclosure is here illustrated.

*installs easier*  
*works better*  
*lasts longer*

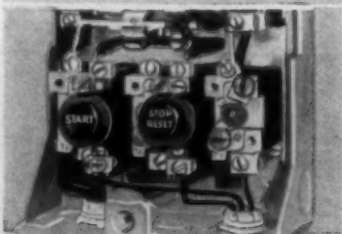
**C-H 9591 COMBINATION STARTER**  
Combines a circuit breaker with the motor starter in one compact unit. NEMA 12 Enclosure is here illustrated.

Users have had many dramatic proofs of the advantages built into Cutler-Hammer ★ ★ ★ Motor Control. They know the three silver stars on the Cutler-Hammer nameplate identify control equipment that sets three entirely new standards of motor control performance and value. Star #1: Amazing savings in installation costs which often exceed the cost of the control. Star #2: Performance so uniform and dependable that this control often saves many times its cost by the production interruptions it avoids. Star #3: Life so greatly increased that this control *never*

requires maintenance expense in 90% of its uses.

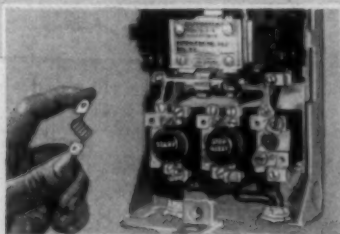
Now combination starters are available in this spectacular new line of Cutler-Hammer ★ ★ ★ Motor Control. Your nearby Cutler-Hammer Authorized Distributor has been stocked and is ready to serve you. Bulletin 9589 Starters incorporate a rugged disconnect switch of advanced design with or without fuses. Bulletin 9591 Starters are equipped with circuit breakers. Order now for prompt delivery.

**CUTLER-HAMMER, Inc.,**  
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### Full Three-Phase Protection

Only three overload relays can give complete three-phase protection to avoid motor burn-outs and their costly interruptions to production. And only Cutler-Hammer offers this complete three-phase protection in standard combination starters. You pay only for the third relay, nothing extra for special engineering or special enclosures.



### Adjustable Load Sensing Coils

The accurate adjustment of overload protection permits motors to work harder without damage to motor windings. This is more important than ever with the newer type small frame motors. Adjustable load sensing coils in these new starters provide 3% loading accuracy instead of the 10% to 12% accuracy in competitive control.



### Superlife Vertical Contacts

Experienced control users insist on dust-safe vertical contacts. And now the famous Cutler-Hammer vertical contacts have been doubly improved. First, their new lightweight design cuts bounce to reduce arcing. Second, any arcing that might occur is now pressure-quenched. Compare performance and see the difference.

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**KING EDWARD**  
BE SURE TO STOP AT  
**ROYAL CREST HOTELS**

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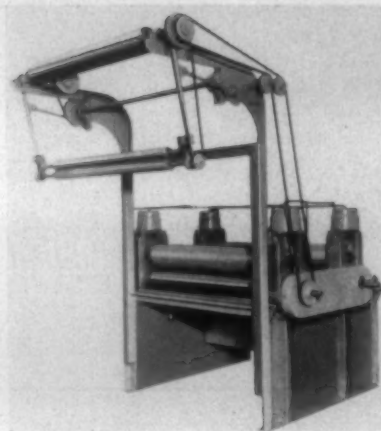
some of AISiMag 513 (super long wearing). Both materials are extremely hard and homogeneous. They have a smooth finish and are manufactured to unusually close tolerances.

The division invites all textile mills to test these new guides. A limited quantity of the designs illustrated are available for test purposes without charge. Small quantity orders of these designs for extensive tests will be filled at quantity prices, the division reports, or completely new designs to specifications can be made.

(Request Item No. C-15)

#### Dual Saturator

The Wiesner-Rapp Co. Inc. announces the development of its M-8 dual saturator, designed for wetting out and applying finish to many types of fabrics. It consists of 2 pairs of 8"-dia. by 50" face squeezer rolls each having stainless steel bottom and rubber covered top rolls. The rolls are mounted in stainless steel supporting stands. There are 2 separate stainless steel pad tanks with an immersion roll in each. These tanks are supported between stainless steel side supports. Pressure to the top rolls is supplied through Bendix-Westinghouse Rotochambers which have no stuffing glands therefore do not leak and when the air is released from the pressure side, the top roll is automatically raised out of contact with the bottom roll, the company points out. In the larger of the 2 tanks there is a combination



M-8 dual saturator (Wiesner-Rapp Co.)

plug drain and over-flow drain, making it possible to drain the tub completely or maintain a constant liquor level when so desired. At the leaving end of the saturator there is mounted a roll type folder equipped with stainless steel draw roll. This folder has a maximum swing of 48". Expanders, drive and other features can be included to meet individual requirements.

(Request Item No. C-16)

#### Non-Ionic Softener

Dextrol GM-94, a non-ionic softener said to have no wetting or rewetting properties, has been announced by Dexter Chemical Corp. The new softener is designed specifically for use with water repellents of both permanent and non-permanent types and the company claims that GM-94 does not affect the spray rating of fabrics. Goods may be softened prior to application of the water-repellent finish or GM-94 may be mixed with the repellent. At the same time, it is said, GM-94 is an effective softener for rubber latex backing material, producing a more pliable film when mixed with rubber latices. The softener is said to have a high resistance to salt, acids and alkalies and will not develop odor or color in storage of treated fabrics. Dexter recommends the following formulae: When used directly in the water repellent, 12 to 24 lbs. of Dextrol GM-94 to 100 gals. of the mix; for mixing with latices, 30 to 60 lbs. of GM-94 to 100 gals. of latex mix, and when padded on treated or untreated goods, 16 to 25 lbs. in 100 gals. of water.

(Request Item No. C-17)

#### Adjustable-Speed Drives

The American Pulley Co. announces a new single-groove wide-range adjustable-speed drive available in "Q," "R" and "W" belt sections. This new drive has been made possible by recent developments which have increased capacities of this type of drive so it will safely transmit up to a maximum of 30 h.p. According to the manufacturer, the drive permits a speed variation of as much as 100% at h.p. capacities comparable to the former drives having 2 or 3 belts. Installation results in a considerable saving of space and money as compared with multi-V-belt adjustable-speed drives, it is said. Some of the features of the new drive include: (1) single-groove wide-range ad-

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*Equipment*

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Donald E. Hamilton, President

justable-diameter sheave with exclusive double-taper hub construction. "Q" groove sheave has a pitch diameter range from 5.0 to 8.5, "R" groove from 5.5 to 10.0 and "W" from 5.5 to 11.0. (2) Wedg-Tite companion sheave with groove angles precisely machined to match Wedgbelt angle. (3) wide-range Wedgbelt, built to transmit greater h.p. than before. (4) Adjusto-Slide motor base, with single screw adjustment, designed for use with American adjustable-speed drives. Complete engineering catalog on this line is available free upon request. (Request Item No. C-18)

### Sound Barrier Curtain

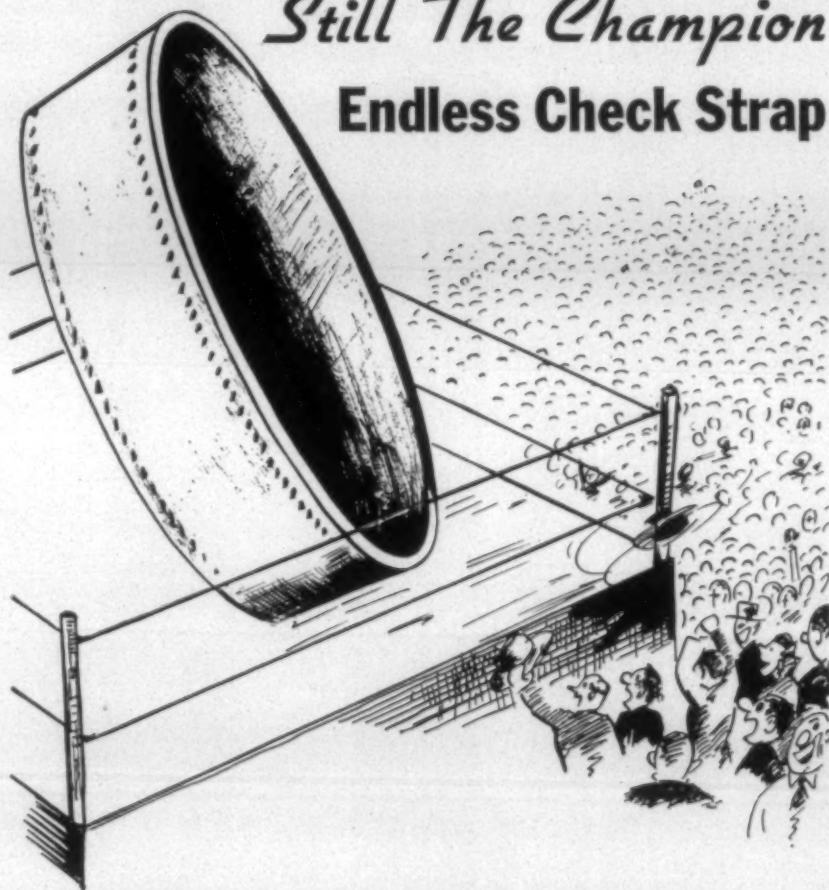
Bemis Bro. Bag Co. reports the development and production of a new product called TransWall, a lightweight, retractable sound barrier curtain designed especially for industrial applications. The curtain is made of a unique flame-resistive and sound-reflecting material known as Bemisorb, a specially treated and coated burlap recently introduced by Bemis. The new product is designed to reduce critical plant noise level at its source. Designed and engineered for individual applications, TransWalls can be installed anywhere to isolate machine and production noise, and in areas that are potential fire hazards or otherwise dangerous to employees, Bemis points out.

Described as a high-density folding curtain, TransWall serves as a sound-reduction wall that can be quickly installed and easily adjusted when the need for more space is required, or when one production area must be either enlarged, eliminated or moved. The curtains consist of 7" panel folds, chain-spaced to prevent complete extension, and supported by steel top plates that operate on nylon wheels in an enclosed track. They are available in several tones of decorator colors. (Request Item No. C-19)

### Table Model Instron Tester

A new table model of the versatile Instron universal testing instrument is announced by Instron Engineering Corp. This compact, sensitive instrument is said to record with electronic accuracy stress-strain curves under tension or compression. Full scale load ranges from 2 grams to 200 lbs. are available through the choice of 3 load cells. The benefits of inertialess weighing permits rapid response to load fluctuations in the sample which, with the elimination of mechanical friction, enables a degree of accuracy heretofore unobtainable in an instrument in this price range, the company reports. The high-speed recorder is equipped with a choice of synchronous chart speeds to provide a range of extension magnification. The crosshead is driven synchronously through fast acting magnetic clutches and convenient change gears to provide a choice of constant and reversible testing speeds over a range of 250 to 1. This range can be either from 0.2" to 50" per minute or, in alternate models, from 0.02" to 5" per minute with an available jaw travel of 30". The rapid traverse speed can be selected by similar change gears over a speed range from 50" to 2" per minute, or alternatively 5" to 0.2". An unobstructed space of 3" is provided around the crosshead assembly to enable the use of

## The Original And Still The Champion Endless Check Strap



Dodenhoff introduced the molded endless check strap 14 years ago — and has been the leader in the field ever since.

The Champion Endless Check Strap gives longer and better service because it is molded to hit the picker stick squarely each time and is so built that it retains its shape throughout its long life. Average service is 15 months — 2 shifts — over 65 million picks per strap.

Champion Straps are made of flawless center-stock 2-ply English hair on steerhide. This is thoroughly prestretched. Three-inch laps are firmly bonded by glue and pressure, tops and bottoms are Nylon stitched, and the check strap is then put through several forming operations to permanently set the striking angle.

We are confident that no other endless check strap will out-perform the Champion . . . the original. Order a supply today and make your own comparisons.



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Type S  
ROTARY UNION

After making comparative tests, one mill group standardized on ROTARY UNIONS and purchased 4000 . . . 18 months ago. These 4000 ROTARY UNIONS have since been operating 16 to 24 hours a day . . . without adjustments or mechanical maintenance and with practically no replacements.

Other mills report similar results. Service of three years without a single work stoppage is not unusual.

No other revolving steam joint outperforms the ROTARY UNION.

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## The Textile Shops

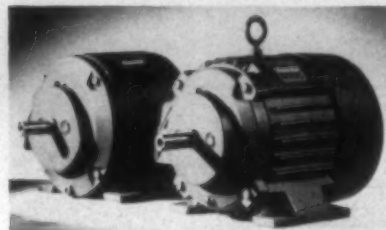
Acid Tanks	Coppersmithing	Picker Screens
Ball Bearing Journal Assemblies for Slashers and Dry Cans	Cowl Ventilators	Perforated Metal
Bleaching Tanks and Tubs	Cylinders	English Wire Cloth
Card Screens	Spinning	Galvanized Wire
Repaired, New	Spooling	Pneumatic Conveying Systems
Card Screen Bars and Ribs	Twisting	Quill Cans
Card Screen Lickerins for Cotton and Rayon	Drip Pans	Rolls of All Types and Sizes
Chemical Tanks	Dye Kettles and Vats (New)	Size Kettles
Condensers	Dry Cans	Tanks
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Conveyors	Driers	Special Machines
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SPARTANBURG, SOUTH CAROLINA, U. S. A.

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special conditioning chambers without modification of the unit. Small laboratories can test under controlled conditions without expensive room installations, it is pointed out. It also makes possible testing under unusual atmospheric conditions. Accessory equipment is available to meet individual testing requirements. (Request Item No. C-20)

### Totally-Protected Motors



Protected a.c. motor (left), and enclosed fan-cooled a.c. motor (right), two examples from new line (Reliance Electric & Engineering Co.)

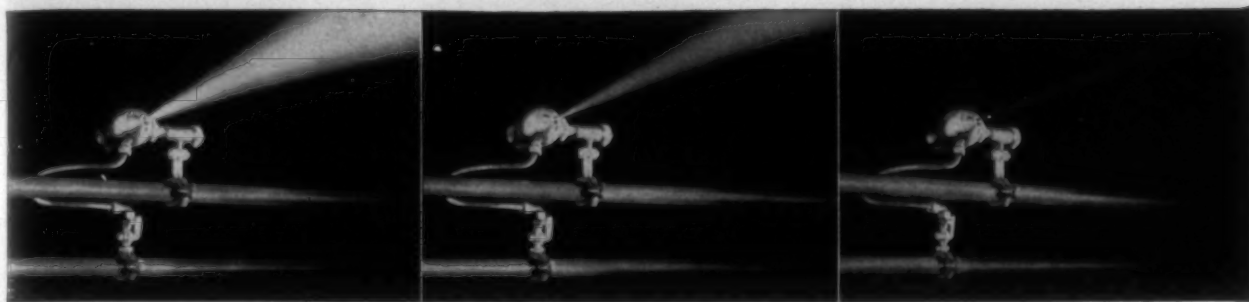
Reliance Electric and Engineering Co. has announced a new line of totally-protected a.c. motors. The new Reliance motors are said to combine eye appeal, rugged construction and precision performance to meet all needs. Total protection is built into these motors—all the way from solid-cast frames to the plastic sleeving that protects brazed coil head connections in the insulated "heart" of the motor. The company points out that regardless of mounting positions, the new motor offers complete protection against drip, splash and falling objects. Ventilation louvers are positioned in the end brackets. The frame extends beyond the coil heads to give full protection to the windings, an especially important feature when end brackets are removed, it is said. Compact, rugged brackets insure shockproof shaft support by placing the bearing mountings closer to the frame. New Neoprene gaskets afford a positive seal between the frame and conduit box, and these gaskets have indexed "pressure knobs" to securely hold each lead. Conduit boxes can be positioned in any of the 4 quadrants for ease of installation, Reliance reports.

Reliance enclosed a.c. motors of the enclosed group are fan-cooled, corrosion-proof and explosion-proof. Each is designed to withstand the abuses of specific applications with such features, for example, as corrosion-proof outer fans and cast iron conduit boxes on the fan-cooled, Neoprene shaft slingers and optional stainless steel components on the corrosion-proof, and brass shaft slingers affording 5-direction labyrinth fits on the explosion-proof motor.

(Request Item No. C-21)

### Hard Water Bypass

At times, it is necessary to treat water to produce a controlled degree of hardness rather than complete softness. For this need, Graver Water Conditioning offers an effective zeolite bypass. This system controls the proportionate mixing of untreated hard water and treated, fully-softened water to produce whatever degree of hardness is de-



*"I want my humidifier heads to keep running whenever humidification is needed," says a mill executive —*

Good idea, of course. That's why he likes GRADUMATICS.

Output is controlled automatically to maintain a constant humidity at all times.

Operating with both air and water under pressure, GRADUMATICS are more efficient than gravity type atomizers. Use less air. "Atomization" of moisture is more complete, resulting in quicker evaporation, and longer "blow" of the resulting vapor. Excellent performance at all evaporative outputs from 2 to 16 pounds of water per hour.

No other system approaches the GRADUMATIC in uniformity of resulting humidity and in economy of operation at high capacity. Good economy and even better spray quality when operating at low evaporative output.

There are other advantages too. For example the GRADUMATIC head is made non-adjustable. No guess-test required. You know it's right. And with both air and water under pressure, frequent self-cleaning is quite unnecessary.

Simple? Just look at the few parts. Repairs are a cinch, and seldom needed.

## Parks - Cramer Company

FITCHBURG, MASS.

CHARLOTTE, N. C.

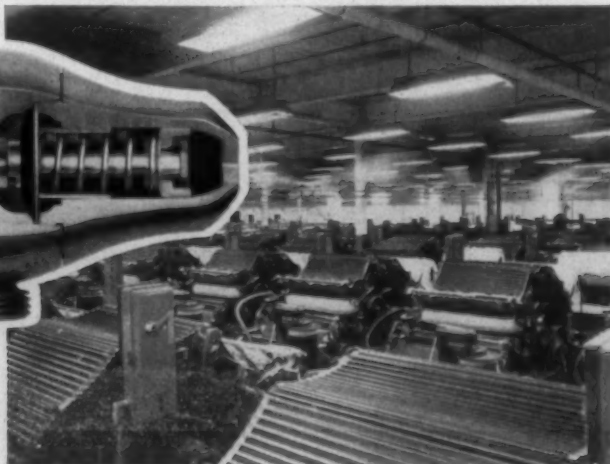
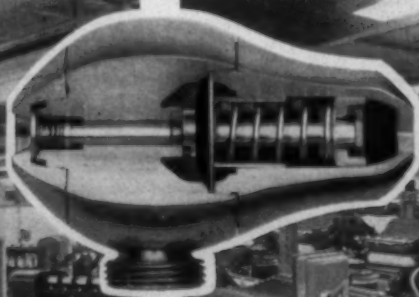
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*Humidifying and Air Conditioning Since 1904*

*Traveling Cleaner Systems Since 1926*

With Airchanger, or as boosters for Central Station System

For direct humidification in all textile mill departments



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sired, Graver reports. The operation is said to be extremely simple. Only a single setting (on the adjustable orifice) is required to regulate the ratio of hard water to soft. Valves are automatic and adjust rapidly and surely to flow variations of 1-to-4 without any perceptible loss of accuracy. There are no pumps and there is a minimum of moving parts. This simplicity keeps costs down for installation, operation and maintenance and assures a maximum of dependability, the company points out. Also, bypassing the zeolite softener extends softening cycles and produces savings in operation and resin costs. While there are many uses for this device, it most frequently occurs in controlled-scale corrosion prevention and wherever it is preferable to use simple zeolite softening without producing a zero-hardness water. (Request Item No. C-22)

#### Rayon Tire Yarn

American Enka Corp. is now producing a super-strength type of rayon yarn for tires, according to an announcement made recently by the company. The yarn is being sold in commercial quantities and marketed under the trade name Suprenka.

(Request Item No. C-23)

#### Emboset Resins

Metro-Atlantic has announced 3 new Emboset resins—Emboset Loclor, Emboset NR and Emboset B. Emboset Loclor is described as a low chlorine retentive resin that produces crush resistance and stabilized effects on cotton and rayon. The company points out that because of its high stabilizing efficiency, it has been found to be an excellent product in the production of embossed and glazed chintz effects on cotton. Emboset Loclor is recommended on fabrics which are to be subjected to bleaching as well as washing. It does not yellow and keeps tensile strength losses at a minimum. It has high shelf-life, is very stable, easily diluted in water and runs with no foam, the company states.

Emboset NR is said to be an outstanding product in the respect that there is very little free formaldehyde liberated in the processing and from the goods in an un-

washed state. This liquid resin reportedly produces crease resistance, shrinkage control and firmness on hydrophobic fibers such as acetate, Orlon, Dacron and nylon. It is said to be especially efficient on heavy nylon shoe cloth, and for sheer nylon blouse fabric where a firm, resilient hand is desired. Economical and easy to run and cure, it has high shelf-life and good durability to washing and dry cleaning.

Emboset B is described as a liquid stabilizing and crush-proofing resin with exceptional shelf-life and economy in use. It produces a soft hand with superior fastness properties, crease resistance and shrinkage control. It is designed for use on synthetics and mixtures. (Request Item No. C-24)

#### Corrosion Control

A new hot spray vinyl specifically engineered for economical and effective corrosion control has been announced by Prufcoat Laboratories Inc. Said to combine ease of handling and good spraying characteristics with optimum build and appearance, Prufcoat's new hot spray vinyl provides 4 mils in a single spray pass. One prime and 1 hot spray coat give the 5 to 6 mil total thickness needed in most corrosion protection work, the company points out, and vinyl thicknesses in the 10 to 15 mil range without runs or sags are possible in an uninterrupted multiple pass spray application. Ease of handling and the high build obtainable with the hot spray vinyl mean greatly increased man-hour efficiency, Prufcoat reports, because fewer coats and faster applications save time. (Request Item No. C-25)

#### Lift Truck Attachment

Lamson Mobilift Corp. announces the marketing of a new-type squeeze clamp attachment for its stand-up and sit-down fork lift trucks. The attachment is similar to a standard squeeze clamp, but with special round forks 33" long and egg-shaped on the ends. The forks will close up to a minimum of approximately 18" and open up to a maximum of 55". The special attachment has been designed for handling rolls of materials that are stacked flat in a trailer or in a warehouse. As rolls of textile material are usually wrapped in burlap covering which is very easily snagged, the squeeze part of the clamp is seldom used to pick

up material, but instead is generally used to adjust the forks to the size of the roll being picked up. Therefore, the roll is actually cradled between the round forks when being transported. Located at the bottom of the clamp, these round forks can be used to pick up square bales or rolls by the squeeze method and can also be used as regular forks for handling pallets in the usual way.

(Request Item No. C-26)

#### Rider-Type Fork Truck

A double-faced pallet-type Colson handler is being introduced by The Colson Corp., manufacturer of materials handling equipment. Controlled by a single lever, the truck has 2 speeds forward and 2 speeds reverse and automatically shifts from low to high and from high to low. By merely raising the control lever the pallets are lifted. Brakes apply instantly and automatically when the operator lets go of the control handle. This 4,000-lb. capacity pallet truck travels at speeds up to 4 m.p.h. and has a steering arc of 200° and weighs 1,175 lbs. Lowered height of the forks is 3¼" and the lift height is 4". Standard fork lengths are 32, 36, 40, 42, 48, 54 and 60". The forks are 9¼" wide with an 8½" space between them. Width of the truck unit is 29" and length is 30". (Request Item No. C-27)

#### Control Of Scale Formation

Heller Laboratories reports that its new, super-capacity Hydrotron equipment is now available for control of mineral scale formation in boilers and all types of heat exchange equipment. These new, super-capacity Hydrotron units are said to have a 20 per cent increase in rated capacity. In addition to this increase in capacity the prices of the new units in comparable sizes have been reduced. These price reductions are made possible by simplification and improvement in design and manufacture, Heller reports. Hydrotron is the name of a non-chemical process and equipment which changes the manner in which minerals are deposited from water solutions. Instead of minerals depositing as a hard, dense, cement-like coating on heat exchange surfaces, Hydrotron treatment causes minerals to deposit as a fine, loose sludge or slurry that can be removed by normal blow-down.

(Request Item No. C-28)

## LOOM REEDS *for weaving every fabric*



# GREENSBORO LOOM REED CO., INC.

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Here is a thorough, authoritative reference for textile dyeing and printing applications of Naphthols. Extensive coverage is given to fastness properties, formulae and research data. This practical, working handbook of more than 110 pages, includes information on 31 Naphthols and all of the most important fast color Salts and Bases. We will be pleased to present a copy of this handsomely bound manual to you, without obligation. Please make your request on your company's letterhead.

  
**Pfister Chemical Works**

Box 632, Ridgefield, New Jersey

# For the Mill Bookshelf

## Instrument Transformers

The availability of 1955 edition of the G-E instrument transformer buyer's guide, containing basic, up-to-date information on the complete General Electric Co. line, has been announced. The illustrated, 100-page publication, designated GEC-1028, contains ratings, A.S.A. accuracy classifications and prices of all standard G-E indoor and outdoor potential and current transformers. Listings of ratio and phase-angle tests, tables of replacement types and mechanical and thermal data are included.

(Request Item No. C-29)

## Floor Truck Catalog

Hamilton Caster & Mfg. Co. offers a new 64-page catalog (No. 100), illustrating and describing the firm's complete line of platform trucks, 2-wheel hand trucks, shelf and tray trucks, box trucks, wagon trucks, skids, dollies, etc. The catalog includes full technical data and specifications on the Hamilton line, together with a special section illustrating available accessories, body styles and superstructures.

(Request Item No. C-30)

## Improving Air Conditioning

Helpful tips on ways to apply economical and efficient air conditioning are outlined in a new Du Pont booklet entitled *Guideposts to Better Air Conditioning Installations*. The 36-page booklet is a compilation of semi-technical articles by outstanding engineering consultants. The booklet is designated A-8726.

(Request Item No. C-31)

## Electronic Metal Detector

Allis-Chalmers Mfg. Co. has announced the release of a bulletin, *Allis-Chalmers Electronic Metal Detector*, 15B7217B, which gives a description of what the A-C electronic metal detector is and what it does. Used to inspect textiles, the metal detector helps to maintain product purity and prevent damage to equipment. The bulletin also tells how the detector is built and how it works to provide positive electronic inspection. The detector is easy to install and adapts readily to production line use, the bulletin points out.

(Request Item No. C-32)

## Dynamic Response D.C. Motors

Reliance Electric & Engineering Co. has released a new 12-page illustrated bulletin describing its Reliance "T" line d.c. motors with dynamic response. The booklet explains how dynamic response is the new standard performance of the Super "T" mo-

tors, which was formerly found only in specially-designed motors. Information is included on speed ranges, acceleration rates, enclosures, dimensions and selection data. It is also explained how dynamic response came about through an entirely new approach to the design of armatures, shafts, frames, brush riggings, windings and coils. Photographs, diagrams, charts and sketches help to illustrate this story of dynamic response. The information available in this bulletin is intended to point out the facts on the first completely new design d.c. motor in 40 years, the company points out.

(Request Item No. C-33)

## Roll Shaft Fatigue Failure

Rodney Hunt Machine Co. has published a booklet on *Roll Shaft Fatigue Failure*, one of a series of reports published to assist in the design and selection of rolls for specific plant applications. The company states that by comparing actual roll shaft failures with fracture drawings in the report, engineers will be able to rapidly identify causes of failure, enabling improvement of present design and extension of life of roll shafts. Basic fracture appearances of fatigue failures in shafts operating under various load conditions of reverse bending and rotation are shown in simplified line drawings, each concisely explained. The drawings derive from the fact that nearly all fatigue failures show stop marks. These marks indicate the rate of progress of the fatigue crack and are caused by sudden increases in the applied load.

(Request Item No. C-34)

## Sandoz Optical Brighteners

Sandoz Chemical Works Inc. has released the first in a series of brochures on its recent developments in colors and chemicals for the textile industry. The first brochure is an application chart on Leucophor optical brighteners. The chart lists, for a variety of fibers, the recommended product, cast, characteristic properties, main application, point of dissolution, pH range, kettle application and pad application.

(Request Item No. C-35)

## Yale Warehouser Electric Truck

All the features, specifications and dimensions of the new Yale Warehouser electric truck with extend-a-forks are outlined in a bulletin released by materials handling division of The Yale & Towne Mfg. Co. Designed to provide greater aisle operating efficiency through forks which extend beyond the outrigger wheels to pick up and deposit loads, the extend-a-fork feature permits stacking with no straddling of the load, the company reports. This provides the user with extra storage space gained through

close stacking and permits underclearance to be cut to the minimum necessary for fork entry. The truck embodies all the rugged dependability and safe operating provisions of the standard, popular Yale Warehouser electric line introduced in 1952, Yale reports.

(Request Item No. C-36)

## Pneumacard By Pneumafil

Pneumafil Corp. has announced the release of a 4-page booklet on Pneumacard, which the company describes as a Pneumafil system for wool cards. The booklet points out that the system eliminates doublings, protects costly aprons, lightens operator load, saves valuable waste and reduces downtime. Waste ends, broken ends and free fibers are automatically and continually picked up by special air suction flutes extending the entire width of the rub aprons. Vertical ducts, on either side of the condenser head, convey the collected material through an overhead return duct to the feeder hopper. The collected material is separated from the conveying air in the discharge plenum and falls by gravity alone into the feeder hopper ready, in a loose, and opened form, for re-processing. Some exclusive features of Pneumacard, as cited by the company, include: (1) can be made to fit all makes and widths of tape condensers; (2) flutes instantly snap in and out of place for quick access to the rub aprons; (3) no further adjustments necessary after making the initial settings; (4) no obstructions to prevent easy access to normal working areas; (5) absolutely no air blowing into the feeder hopper and stirring up the material; (6) Pneumacard rolls out with the condenser, as a unit, for cleaning and maintenance; and (7) when the condenser is overhauled, the entire Pneumacard unit can be removed in 10 minutes.

(Request Item No. C-37)

## Celanese Arnel Triacetate

Celanese Corp. of America has announced the release of preliminary information on Celanese Arnel triacetate in 2 booklets—TD-13 and TD-14. TD-13 lists the latest information available on the warping, slashing, weaving and quilling of Arnel yarns, and TD-14 describes the processing of Arnel staple fiber.

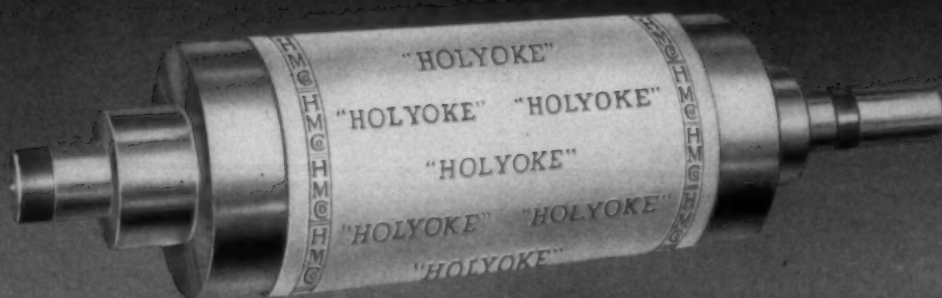
(Request Item No. C-38)

## Power Industrial Trucks

A new 8-page condensed catalog illustrating and describing its line of power industrial trucks has been issued by The Elwell-Parker Electric Co. Included are sections on Elpar fork trucks, high and low-lift platform trucks and crane trucks. Each type truck is detailed in a separate section with photographs of individual models, operating and design information and com-

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EMBOSSING ROLLS for the PAPER and TEXTILE INDUSTRIES  
WATER FILTRATION EQUIPMENT

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#### FOR THE MILL BOOKSHELF

plete specifications. In addition to the 4 basic types of trucks, the catalog also contains data on many of the company's specially designed vehicles for specific operating requirements. Still another section of the catalog contains pictures and data on more than a dozen attachments designed to increase flexibility of the industrial trucks.

(Request Item No. C-39)

#### Ring Twister Parts Catalog

Universal Winding Co. announces the availability of its latest parts catalog for the

Model 10 ring twister. The 59-page catalog includes instructions for ordering repair parts, parts plates and parts lists, twist gear train, twist gear formulae, twist gearing table, twist pulleys and sprockets, belt length chart, lubrication specifications and a typical wiring diagram.

(Request Item No. C-40)

#### The Penford Gums

Penick & Ford Ltd. Inc. announces the release of a 21-page booklet entitled *The Penford Gums*. The illustrated booklet lists the properties of Penford gums and points out the grades and types produced. The

unique properties of the gums both in the fluid state and in the form of dried films are said to account for the superior results obtained with them in the warp sizing of both natural and synthetic fibers; the finishing and printing of fabrics; and the polishing and glazing of threads and cords. The proper use of Penford gums in the warp sizing of combed yarns, spun rayon (viscose), spun rayon-acetate blends, hydrophobic fibers, worsteds and hydrophobic fiber blends are pointed out, along with the use of the gums in printing and finishing of colored fabrics and permanent finishes.

(Request Item No. C-41)

#### Totally-Protected A.C. Motors

Reliance Electric & Engineering Co. has released a new 12-page illustrated information booklet entitled *Check the Facts*, which points out 100 characteristic facts of the new line of Reliance Totally-Protected a.c. motors. Included is a classification of the significant points common to all Reliance a.c. motors with a further breakdown of information pertaining specifically to the protected and enclosed motors. The enclosed group is also broken down further with facts on the fan-cooled, corrosion-proof and explosion-proof designs. The booklet is intended to aid engineers and designers in checking design facts of this complete and integrated new line of motors.

(Request Item No. C-42)

#### About Wheels and Progress

A new brochure, entitled *About Wheels and Progress* has been released by Nutting Truck and Caster Co. Illustrated in 2 colors, this 20-page brochure gives a brief history of the company from its founding to the present; included in the history is the interesting story of the development of the truck that would "turn on a dime" plus an account of the company's growth and its present day facilities to supply floor trucks, casters and wheels. Adhering to a "what's what" pattern instead of the conventional and trite "who's who," it is liberally sprinkled with photos of manufacturing, warehousing and shipping operations plus others of office and engineering facilities.

(Request Item No. C-43)

#### Decorative Color Guide

Publication of a new guide to the use of color in industrial decoration and maintenance is announced by The Sherwin-Williams Co. Called the *Color Harmonizer*, the new book is designed to provide practical assistance in the development of color schemes. Basically, the book consists of full-page (5" x 7") color chips of the 100 standard and intermix colors available in Quali-Kote, the latex-base paint Sherwin-Williams has developed for professional use. Each chip has "windows" through which 2 harmonizing colors are readily visible. Thus, a complete 3-color decorative scheme can be quickly evolved once the key color to be used has been determined. As a further aid in color selection for specific applications, the light reflectance value of

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each color is indicated. In addition to the 100 color chips, the volume also shows the standard colors in Quali-Kote in a separate section. This portion of the book is amplified to include samples of Applikay, the new design-on-color decorating development which permits rolling attractive designs on painted walls. To show how the 8 Applikay colors appear against a background of any Quali-Kote color, transparent acetate sheets imprinted with the Applikay colors are provided. These are simply placed on top of any color chip and the effect becomes immediately apparent.

(Request Item No. C-44)

#### Adjustable Container Packing

Signode Steel Strapping Co. announces a new 4-page folder giving complete, illustrated description of a new method of packing articles or packages of different shapes and sizes. Called Adjusta-Pak, the method uses adjustable fiber board sections telescoped together to form an outer container. The folder shows, step-by-step, how various sizes of modular units can form a compact, quickly assembled container for a variety of packages. It is compactly unitized with steel strapping for safe, secure interstate or export shipping. It shows a size chart and the simple equipment recommended for a complete packing operation.

(Request Item No. C-45)

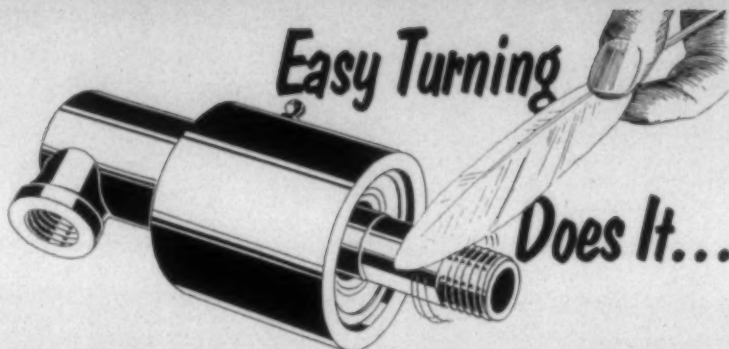
#### M. H. Equipment On Rental Basis

A new, 4-page illustrated brochure by Market Forge Co. tells how materials handling equipment can now be rented, leased and purchased at low cost. The Marforge RLO Plan provides for rental of as much equipment as desired at an extremely low rate, the company reports, with options to purchase equipment at the expiration of the leasing period, or receipt of full allowance of actual market value of equipment returned at the expiration of lease. The brochure points out that renting saves capital for use in investments which can actually offset rental cost and return a profit in addition. It shows how rental costs are written off immediately as operating expenses, and how it is possible to acquire as much of the best materials handling equipment as is needed, even when operating funds are limited so as to restrict purchase of desired equipment.

(Request Item No. C-46)

#### Flow-Therm Liquid Chiller

The flexibility of the Acme Flow-Therm liquid chiller for air conditioning, heat pump and industrial liquid cooling applications is emphasized in a new catalog announced by Acme Industries Inc. Major components of this factory-assembled unit are matched, in the exact capacity needed for efficient and economical performance, to the make and size of compressor used in the system. Single and dual circuit are included in a wide range of capacities, from 15 through 300 tons. In addition to its flexibility, simplification of engineering and more accurate job estimating by architect, consulting engineer or contractor, economi-



### Keeps Anco Rotary Joints Running Far Longer

**ANCO** engineering achieves easy turning plus perfect sealing. In the Anco joint, a piston shaped like this at the sealing point is

pressed against the slippery Rulon seal with just enough pressure (automatically adjusted by line pressure) to ensure perfect sealing. Only line contact is achieved like this

... note the extremely small contact area. Troublefree service for exceptionally long operating periods results in minimum maintenance. Genuinely leakproof, hot or cold. Write us for a sample of Rulon (Dixon's patented bearing material) and see for yourself how easily metal slides on it. With your sample we will send complete engineering data on the Anco Rotary Joint. No obligation.

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SPARTANBURG, S. C. DALLAS, TEXAS



## FOR THE MILL BOOKSHELF

cal installation, operating costs and space-saving compactness are among the advantages of the Flow-Therm. Make up of the Flow-Therm is explained in detail and selection procedures are given for choosing the correct components for the particular requirement. (Request Item No. C-47)

### Waste Water Reclamation

Graver Water Conditioning Co. has announced the release of a reprint on its technical bulletin T-129, which discusses *The Treatment of Sewage Plant Effluent for Water Reuse in Process and Boiler Feed*. Fully documented and illustrated, this article examines current developments and design factors in the use of this potentially rich source of water. Neglected by much of industry in the past, treatment of sewage effluent has proved itself valuable enough in many installations to justify its reconsideration by all industrial planners. Typical plant layouts and result sheets are shown and discussed, important cost factors are considered, and applications and equipment are thoroughly described. A bibliography is

provided for those who want to investigate the subject further.

(Request Item No. C-48)

### Compressed Air Dehydrator

Bulletin C-5154, describing the Dehydrator, released by Hankison Corp., illustrates the newest addition to this company's line of compressed air dehydrators. This unit is designed for small volumes of compressed air serving liquid level indicators, purge assemblies, remote control installations and for dead-end service applications. The bulletin gives specifications of the Models CM-1, CM-15-3 and CM-25-6 Dehydrators, and lists several applications for the units.

(Request Item No. C-49)

### Management Planning And Control

Controllershship Foundation Inc. has announced the release of a study on management planning and control. The first essential of such a program, the report points out, is conscious recognition of management planning and control as a distinct function and responsibility of top management. Long-term goals and short-range objectives are

then established and checked against business forecasts and related research. Budgets are employed as a means of translating plans into sequential steps, while resulting operations are measured and appraised in terms of objectives and carefully developed standards of performance. In evaluating progress, special attention is given to 8 key areas: profitability, market position, productivity, product leadership, personnel development, employee attitudes, public responsibility and the balance between short-range and long-range goals. The 62-page report entitled *Planning, Managing and Measuring the Business*, is based on a case study of management planning and control at the General Electric Co. The case study was originally presented in the form of a symposium at the 1954 Annual National Conference of the Controllers Institute of America, of which the foundation is the research arm. (Request Item No. C-50)

### General Industrial Co. Catalog

A new and colorful catalog has been published by the General Industrial Co. Among the many new items listed in the catalog is the wireless inter-communication system, which requires no wires and no installation. It needs only to be plugged into any regular outlet. (Request Item No. C-51)

### Cartridge Roller Bearings

Rollway Bearing Co. has released a new 4-page catalog describing its new self-contained cartridge roller bearing. Designed for use on industrial materials handling equipment, the new roller bearing is easily installed. It is available in 3 types of rollers: hardened but unground, hardened and ground, or unhardened and unground.

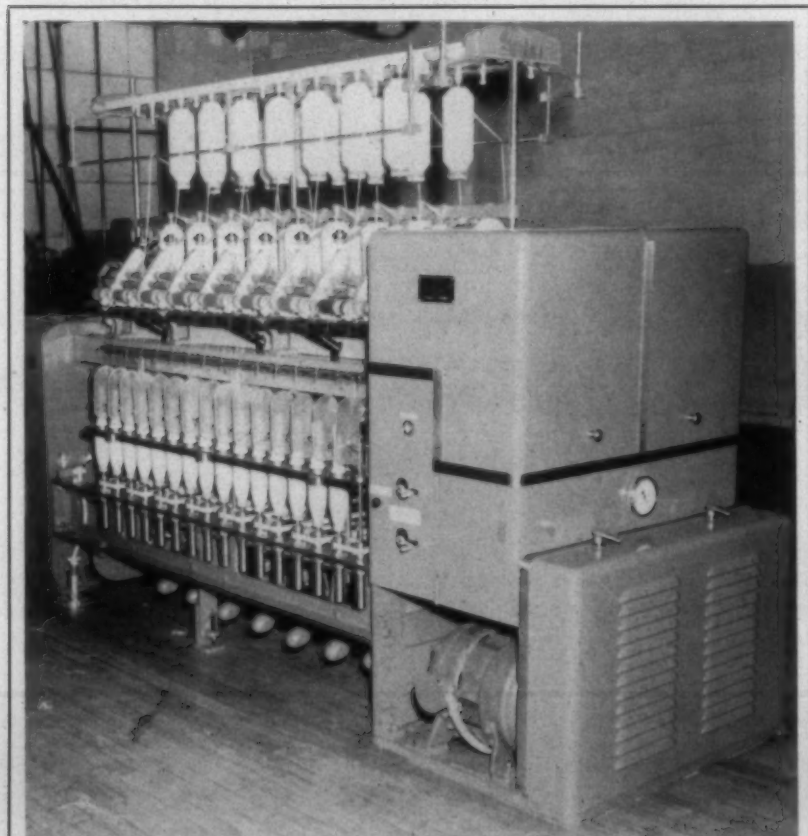
(Request Item No. C-52)

### A Light Look At World Trade

*Innocence Abroad, or World Trade in Ten Easy Lessons*, published by the American Tariff League, is light reading on a weighty subject. In terms of the adventures of a young executive trying to sell his company's products at home and abroad, the booklet highlights, with cartoon illustrations, problems raised by tariffs and other trade barriers. 5½" x 8½", 60 pages, released February 1955. Free single copies available on request while supplies last. Write American Tariff League, 19 West 44th St., New York 36, N. Y.

### Hiring The Physically Handicapped

The National Association of Manufacturers has prepared a 32-page *Guide for Employers in Hiring the Physically Handicapped* to eliminate remaining barriers to the employment of people with physical handicaps. The guide describes step-by-step procedures which industry has found successful in matching handicapped workers to jobs which they can do as well as able-bodied persons. The handbook contains de-



**NEW INSTALLATION AT N. C. VOCATIONAL TEXTILE SCHOOL**—This spinning frame, manufactured by the German firm of Zinser Textilmaschinen G.M.B.H. Ebersbach-Fils, recently was put in operation at the North Carolina Vocational Textile School, Belmont, through the courtesy of Watson & Desmond of Charlotte, N. C. Watson & Desmond is Southern representative for Texplant Corp. of Stamford, Conn., American agent for Zinser. One side of the frame at Belmont is on Zinser super high draft (up to 55) and an additional 16 spindles on the other side is on double-apron drafting (up to 35). The frame is 3½-inch gauge, 2¼-inch ring size, and features SKF bearings, automatic lubrication, pendulum weighting arms and top weighting rolls.



tailed suggestions covering company policy; recruiting, interviewing and placing of job applicants; the training of employees; and follow-up procedures to assure satisfactory job performance, safety and a feeling of well-being on the part of the new employee. The guidebook was prepared under the direction of the N.A.M. advisory committee on employment of the physically handicapped. Copies are available from the asso-

ciation, 2 East 48th St., New York 17, N. Y., at 50c each.

#### **How To Use Portable Power Tools**

This 200-page book by Maurice Reid describes all types of standard portable electric tools, newly-developed machines and numerous attachments for specialized jobs. Step-by-step instructions on uses and

"tricks of the trades" show the craftsman how to turn out more skillful work 12 times faster and with less fatigue than by old hand methods, it is said. Instructive photographs are also included. Library edition published by Thomas Y. Crowell Co., New York City, at \$2.95. Unabridged special editions available at \$1.50 each by writing Porter-Cable Co., 55 Exchange St., Syracuse 8, N. Y.

## *Serving The Textile Industry*

### **Gaston County Plans To Triple Present Size**

Gaston County Dyeing Machine Co., Stanley, N. C., has announced plans to triple the size of the company at a cost of \$1½ million. The manufacturer of stainless steel dyeing machines and auxiliary equipment, which last year grossed some \$1,400,000, will finance the project by offering for sale 300,000 shares of \$1 par stock. The sale of this stock will bring the firm up to its new authorization of \$750,000. It is not known how soon the project will get underway.

### **Planning Of Incentive Campaigns Offered**

A new division to create and conduct special industrial incentive campaigns has been formed by Cappel, MacDonald & Co. of Dayton, Ohio. Under its director, William J. Niederauer of New York City, the new division will design campaigns offering merchandise and travel awards in accident-prevention, absenteeism-reduction and employee suggestion programs. Mr. Niederauer was safety director for the Otis Elevator Co. for a number of years and, during World War II, served as head of the Army Ordnance Department's industrial accident prevention program. Headquarters for the newly-created division are at 1 East 57th St., New York City.

### **Metalwork Firm Equipped To Handle Textile Needs**

The F & H. Heating Service, Spartanburg, S. C., announces that it has added new shop equipment for handling textile metal work. The owners of the firm, R. L. Freeman and A. W. Henderson, former plant superintendent and sheetmetal foreman, respectively, of J. C. Paddock Co., have many years' experience in metalwork and are thoroughly familiar with its many applications in textile plants.

### **Firm Is Formed To Acquire Shrinkage Process Rights**

Allied-Manchester Corp. has been organized at Boston, Mass., by Allied Research & Service Corp. for the purpose of acquiring

full rights to the Hatay process for shrinkage control. The process, invented by Charles G. Hatay, Manchester, Mass., is based on the premise that if proper fiber realignment is achieved during final processing of a fabric, the basic cause of shrinkage is eliminated, and tendency for further shrinkage reduced to a minimum. Dr. Hatay has developed a prototype pilot machine that reportedly carries out this realignment. Allied-Manchester, in time, will produce such an apparatus on a commercial basis. Henry T. Dunker, president and director of

Allied Research, is president of Allied-Manchester.

### **Stein, Hall & Co. Buys Limestone Starch Co.**

Stein, Hall & Co. Inc., through its new, wholly-owned subsidiary, Eastern Maine Starch Co. Inc., has purchased the plant and equipment of the Limestone (Me.) Starch Co. The new owners plan to continue operating the plant for the manufacture of potato starch, under the supervision of James



Cargill, Coker, Jennings  
Parker, Henderson

**BRANCH PLANT FOR SONOCO IN TEXAS**—Sonoco Products Co. of Hartsville, S. C., has announced that it will establish a new branch plant for the manufacture of its textile and paper mill lines in Longview, Tex., within the next three months. Photographed at the time contracts were signed for establishment of the new plant were Robert Cargill, president of the Longview Chamber of Commerce; C. W. Coker of Hartsville, executive vice-president of Sonoco; Rex Jennings, manager of the Longview Chamber of Commerce; S. A. Parker, editor of *The Longview Journal*; and J. L. Henderson, long-time Sonoco employee who will move soon to Texas to become resident manager of the new plant.

In addition to its main plant at Hartsville, Sonoco operates branch plants at Philadelphia, Pa., Garwood, N. J., Mystic, Conn., Lowell, Mass., Akron, Ind., and Los Angeles, Cal., in the United States, as well as two plants in Canada, one in Mexico and affiliated companies in England and Australia.

### SERVING THE TEXTILE INDUSTRY—

H. Page and David Page of Caribou, Me., vice-president and assistant secretary, respectively, of the new company. Stein, Hall & Co. Inc. is an importer, manufacturer and distributor of starches and starch products, with executive offices at New York City and one of its branches at Charlotte, N. C.

### American MonoRail Names Distributor For Alabama

The American MonoRail Co., Cleveland, Ohio, announces the appointment of Newell Equipment Co., P. O. Box 3264, Birmingham, Ala., as its distributor for the state of Alabama. The firm is headed by C. P. Newell, formerly sales engineer for American MonoRail at the Atlanta, Ga., district office.

### National Starch Announces Extensive Expansion Plans

Frank Greenwall, president of National Starch Products Inc., announces that the company plans to enter immediately upon a long range program for the expansion and modernization of all company manufacturing and research facilities. The plan, which provides for the expenditure of \$3½ million, has been approved by the board of directors, and will provide for the following: (1) new and modernized equipment will be installed at the Plainfield, Chicago and San Francisco plants, so as to improve adhesive manufacturing facilities; (2) expansion and modernization of buildings and

equipment at the Indianapolis plant, which will substantially increase the present starch grind, as well as the capacity for making unique specialty starches; (3) Alexander Research Laboratory, Plainfield, N. J., will be doubled in size, so as to consolidate and co-ordinate all starch, resin and adhesive technical and research efforts in the East; and (4) equipment improvements to permit more efficient manufacture of the many new resin products introduced in the last several years.

### Sealube Names Livingstone Southeastern Sales Agent

Livingstone Coating Corp., Charlotte, N. C., has been appointed Southeastern distributor for the Sealube Co., Wakefield, Mass., for the complete line of corrosion-resistant materials. Livingstone will cover the states of Virginia, North and South Carolina, Tennessee, Georgia, Alabama and Florida.

### German Firm Represented By Butterworth & Texplant

Arrangements for the sale and servicing of textile finishing machinery made in Germany by A. Monforts, Maschinenfabrik, have been announced by H. W. Butterworth & Sons Co., Bethayres, Pa., machinery builders, and Texplant Corp., Stamford, Conn., machinery importers. Machinery covered by the agreement includes nappers, air drying equipment and cloth room machinery. Air drying machinery made by Monforts includes curing ovens, tensionless dryers and printing dryers. Mon-

forts makes greige room machinery for cropping, brushing and spraying, and finishing machinery for rolling, folding, doubling and hooking. J. Ebert Butterworth, president of H. W. Butterworth & Sons Co., points out that his firm has been associated with Texplant in a joint venture agreement since 1951. Albert J. Lindell, Texplant president, has been a foreign sales representative for Butterworth since 1944. The Monforts line of machinery supplements Butterworth's diversified equipment for the wet end of textile finishing, according to Mr. Butterworth. Spare parts and service will be a Butterworth responsibility. Texplant will join with Butterworth in sales and financial arrangements.

### Steam Boiler Firm Marks 70th Year

Orr & Sembower Inc., Reading, Pa., manufacturer of steam boilers, recently celebrated its 70th anniversary. Founded in 1885, the firm was originally called the Reading Engine Works and produced 3 vertical steam engines a week. These engines had a range of 3 to 20 h.p. Today, the firm concentrates largely on the manufacture of packaged automatic steam boilers. It no longer makes steam engines. Through the years personnel changes have occurred in the company until at present the families of the original founders, Clarence H. Sembower and William Harry Orr, brothers-in-law, no longer have any business interest in the firm. Frederick H. Klein has been president since 1945. Other officers include W. K. Davis, secretary and assistant treasurer; John A. Tapparo, general superintendent; and Edgar A. Burt, chief engineer.

### Reliance Electric Buys Reeves Pulley Co.

Reliance Electric & Engineering Co., Cleveland, Ohio, has acquired control of Reeves Pulley Co., Columbus, Ohio. While terms of the acquisition were not made known, it is reported that it will involve transfer of stock and cash.

### Celanese Corp. Announces New Development Facilities

Celanese Corp. of America has announced that it will establish new development laboratories at Charlotte, N. C., where the firm now maintains central headquarters. According to Celanese officials, the laboratories will provide a vital link between research at the company's Summit, N. J., laboratories and fiber production at existing and new plants; furnish a sound and broad technical base for improved applications and development; and provide for expanded activities in product and sales development and better technical service to fiber customers. Although the first section of the building is expected to be in operation before the end of this year, the full extent of the undertaking will not be realized for several years, it was pointed out. Manager of the new laboratories will be David Taylor, who previously has served at the company's plants at Narrows, Va., and Cumberland, Md.



**NEW COTTON FIBER LABORATORY**—A cotton fiber and yarn testing laboratory has been put into operation by Jones, Gardner & Beal Inc. in its office at Montgomery Building Place, Spartanburg, S. C. Joseph A. Ladebauche, formerly director of the firm's Memphis, Tenn., laboratory, is in charge of the new facilities. Graves Jones is vice-president in charge of the Spartanburg office.

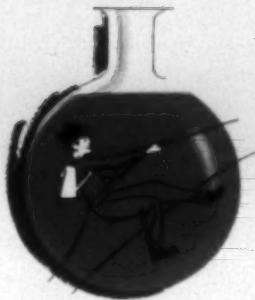
The new laboratory is equipped with various instruments which enable it to check not only the raw cotton but also mill processes and end-products. The laboratory operates on A.S.T.M. standards and is rigidly controlled both for constant temperature and relative humidity conditions.

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†du Pont Polyester fiber

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# WATCHING

# WASHINGTON

[Exclusive and Timely News from the Nation's Capital]

Adlai Stevenson has become the strongest influence behind legislative action in the House, and is persuasive in the Senate. He is credited with the \$20 tax cut put through the House, and with raising a solid line of opposition to the Eisenhower program. He is urging that an alternative be put forward for each of the President's proposals, and a consistent barrage of attack laid down on Mr. Eisenhower and his Administration.

The about-face of Democratic leaders in the House from the start of the session is attributed to conferences they had with Mr. Stevenson. At meetings and dinners he told them they should come up with a positive program of their own, in opposition to the President's proposal, and the President should be resisted on an item-by-item basis. In this proposal he has the active support of the C.I.O. Political Action Committee.

Principal consultant with House majority leaders on economic legislation, including taxes, is Leon Keyserling, who was Mr. Truman's economic adviser. Keyserling has laid down a long list of Truman-tinted proposals which he says the House majority should enact as a campaign premise for next year. Two of them are for tax cuts, the others are for big and expanded federal spending.

At the head of the Keyserling list, and being pushed by Mr. Stevenson, is a new legal minimum wage of \$1.25 an hour, higher jobless benefits, and \$1 billion increase in Social Security retirement. Public housing would be reviewed on a vast scale up to 500,000 units a year. Nearly \$1 billion more aid would go into agriculture, and spending for defense would increase by over \$3 billion. Efforts would be made to increase wages by over \$15 billion.

Privately, Mr. Stevenson has expressed the belief that with conservative Southern Democrats at the head of House committees, only a negative record will be made. The President is leaning heavily on the Democratic leaders, but under the Stevenson advice they are moving toward rigid farm price supports and adoption of things the big unions want.

Union leaders are adding to Administration troubles by waging a bitter fight on Secretary of Labor Mitchell. They have never been friendly to him, and are missing no opportunity to slash at him and the Administration. While Mitchell is attempting conciliation, the union bosses are almost solidly in the radical Democratic camp. Question is whether rank-and-file union members are following them.

Conservative Democratic leaders in the Senate are hopeful that after the \$20 tax cut differences have been ironed out, harmony can be restored. But with the radical wing of Democrats driving hard against all points in the Eisenhower program, and assailing conservatives all the way, the prospect of harmony is not bright. Speaker Rayburn, lined up with Mr. Stevenson, is at wide variance with party conservatives in the Senate.

The Administration is in trouble with several of its programs, including public works, highway building and the school aid construction program. Chief difficulty is that the states are called upon to produce larger matching funds than they want to do, and various House members are dissatisfied because federal

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satisfied the  
Safety Engineering  
Department..."*



A leading carpet manufacturer in the Philadelphia area was faced with a serious problem — oil slick floors caused by lubricant leakage and throw-off. The Safety Engineering Department issued frequent warnings about dangerous conditions near the looms. Both conventional and special-purpose lubricants were tried but they either did not do a proper lubricating job or failed to stop the leakage.

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grants are not on the lavish scale of Truman days. One House member boldly said, "There is not enough 'take home pay' in this for us."

The pay raise of \$7,500 a year for members of Congress is the most seriously muddled legislation in years. The trouble was the fringe benefits voted with the pay raise, but rejected by the Senate. Pressure groups have seized upon it to push their schemes; if Congress can vote \$4 million for a pay raise, it can vote a little more for the things they want, too. The raise could add many millions to the budget deficit before the session ends.

Senator Byrd again is putting forward two ideas for restoring some semblance of control over the way the government pays out its money. He wants to give the President an item-veto power. As it is, he must approve an entire whole bill, or veto all of it. If it is a big departmental spending bill he usually holds his nose and signs it. The other idea is to roll all appropriations of Congress into one bill, instead of dribbling the millions and billions out through a dozen or more big bills and innumerable small bills.

Automation in employment is not decreasing the total in job opportunities, Benjamin Fairless told a U. S. Chamber of Commerce audience. He said that claims of this kind, by unions and their spokesmen, are "a miserable fraud." He said while new machines have reduced jobs in certain categories, they have created new or different and often better jobs, and helped employees with shorter weeks, higher pay per worker and technological advances.

Union leaders are driving hard to induce Congress to strike the provision from the Taft-Hartley Act giving precedence to state "right-to-work" laws. They acknowledge their effort must have White House backing to succeed. The A.F.L. says this is "the big issue" before Congress because the state laws "are destroying union standards and security through piecemeal laws by the states."

While the A.F.L. still wants a "thorough revision" of Taft-Hartley, it will be temporarily content to strike out the provision on state laws. It feels a political issue can be made on failure to increase minimum wages and lower taxes in the lower brackets, but calls the state laws an attack on its own security, and not susceptible to political exploitation.

With Utah as the 18th state to enact a right-to-work law, the score in state legislatures stands at five victories and one defeat. Four states, Arkansas, South Carolina, Tennessee and North Dakota, voted down efforts for repeal. Idaho rejected a right to work proposal. Early in March the issue was still pending in 15 other state legislatures.

Machinery of N.L.R.B. has slowed down and work has piled up while the agency did not have a general counsel. Without this official no complaints in unfair labor practice cases have been issued since last August. Only this official can seek injunctions against secondary boycotts. The Senate Labor Committee delayed for over six months reporting the President's nomination of Theophil Krammholz for the job.

Mr. Krammholz was vigorously opposed by Chicago unions on the claim he had acted only for employers in labor cases he represented. But a whole chain of other union protests were brought in against Mr. Krammholz and Judge Boyd Leedom who was nominated by the President for a board vacancy. The unions are demanding that some of their own number be put on N.L.R.B.

Republican leaders in Congress are complaining over the measure of cooperation they have with the White House these days. Presidential aides, as they see it, are too anxious to placate Democratic leaders, and Democrats have been given a strong advantage in the legislative program. Teamwork is at a low ebb. The Democrats, acting independently, may push through several measures the President will have to veto.





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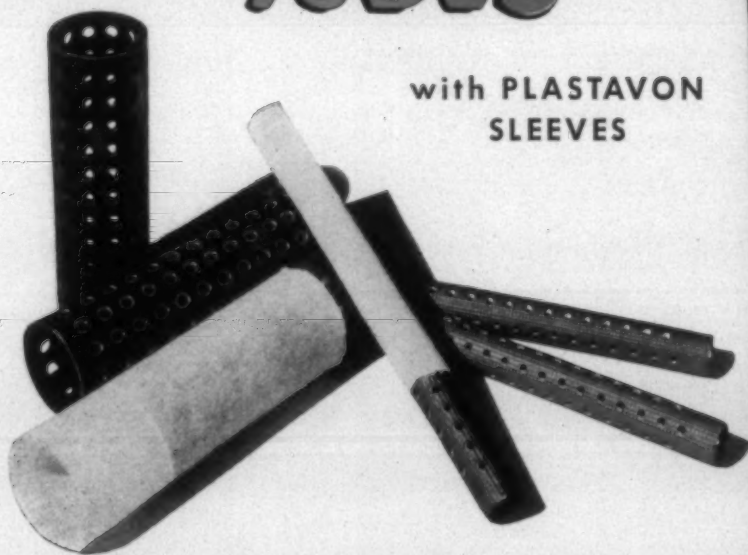
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TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, \$1.50; three years payable in advance, \$3.00;

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## An Issue: 'Right-To-Work'

A significant movement initiated in Washington recently toward decreasing the scope of federal activity is legislation designed to protect state laws against federal encroachment. No doubt you will be hearing a lot in the near future about this endeavor, which is intended to let the people back home handle more of their problems rather than run to Washington with them. Bills to effect this have been introduced in the House by Representative Howard Smith (D., Va.) and in the Senate by William E. Jenner (R., Ind.).

Their measures would protect all state laws from being overturned by the federal courts under the doctrine of federal pre-emption. The pre-emption theory holds that whenever Congress has desired to enact any law in a given area, all state legislation dealing with the same subject is invalid. Under the Smith-Jenner bills, Congress would have to say specifically that a state law would not continue to be effective before the federal courts could apply the pre-emption theory.

A case in point is Section 14 (b) of the Taft-Hartley Act, which seems to be the No. 1 target of labor union lobbyists this year. The American Federation of Labor executive council states that it is this section of Taft-Hartley which has made possible the passing of "right-to-work" laws in a number of states. This A.F.L. thinking is in line with that of the C.I.O.; both organizations are attacking the state right-to-work laws not only in Washington but also in various state legislatures.

A union official will quote moral law extensively to justify the right of an employer and his union representatives to enter into a contract providing for "union security." But the same union official will rarely admit that a right-to-work

law is tough on him because he has to go out and collect dues every month instead of having the company payroll office collect them for him. He also has to act on every union member's complaint for fear of losing the member, who is under no obligation to remain a member. One textile union official has urged members of organized labor to strike back at states having right-to-work laws, by refusing to buy non-union products made in those states. "This is the most forceful way I know of to bring to the attention of politicians, employers, business organizations and non-union workers in such states that the havoc-wreaking competition created as a result of such laws will no longer be tolerated." Using this weapon will help retard employers who have or are considering migrating to these localities, he added. He is, of course, taking a crack at Southern states, 11 of which have right-to-work laws; but he is prone to forget that North Dakota, South Dakota, Iowa, Arizona, Nebraska, Nevada and Utah—none of which are very significant producers of textiles—all have such legislation on their books.

The unions are making a concerted drive for repeal in all of the states having such laws with the extravagant claims that they are designed to destroy unions, calling them the "Right-to-Wreck" laws. They insist that since they do not create any jobs they are a detriment to the economy of the states in which they are in operation, but some statistics prepared by reliable agencies refute any such arguments. The Bureau of Labor Statistics shows that during the past five years eight states which had such laws in operation increased hourly earnings in manufacturing by 27.2 per



cent against 26.7 per cent in other states. The increase in non-farm employment was 19.1 per cent against 14.3 per cent. Market Statistics Inc. reports retail sales increased approximately the same in all states and in 12 right-to-work states buying income increased 22.7 per cent against 19.1 per cent in the states without such laws. Perhaps the

most significant item of all is a report by the Department of Commerce which shows that the increase in the number of businesses in the past five years amounted to 8.2 per cent in the right-to-work states against a U. S. average of only four per cent.

The nature of right-to-work legislation and the plans of one group to preserve such laws are described in a special article by E. S. Dillard in this issue. Turn to Page 59; it will be worth your study.

## TEXTILE INDUSTRY SCHEDULE

— 1955 —

- Mar. 31-Apr. 1 (Th-F)—SOUTHERN MUNICIPAL AND INDUSTRIAL WASTE CONFERENCE, College of Engineering, Duke University, Durham, N. C.
- \*Mar. 31-Apr. 1 (Th-F)—CAROLINAS SEC., AMERICAN SOCIETY FOR QUALITY CONTROL, Clemson House, Clemson, S. C.
- Mar. 21-Apr. 2 (Th-Sa)—Annual meeting, A.C.M.I., Palm Beach (Fla.) Biltmore Hotel.
- Apr. 2 (Sa)—EASTERN CAROLINA DIV., S.T.A., North Carolina State College School of Textiles, Raleigh.
- \*Apr. 9 (Sa)—ALABAMA TEXTILE OPERATING EXECUTIVES, Thach Auditorium, Alabama Polytechnic Institute, Auburn.
- Apr. 13-15 (W-F)—Annual meeting, AMERICAN SOCIETY OF LUBRICATION ENGINEERS, Hotel Sherman, Chicago, Ill.
- Apr. 13-15 (W-F)—Annual convention, ALABAMA COTTON MFERS. ASSN., Buena Vista Hotel, Biloxi, Miss.
- Apr. 14-16 (Th-Sa)—Annual convention, PHI PSI TEXTILE FRATERNITY, Beaconsfield Hotel, Brookline, Mass.
- Apr. 16 (Sa)—NORTHERN NORTH CAROLINA-VIRGINIA DIV., S.T.A., Spray, N. C.
- Apr. 18-20 (M-W)—Packaging conference, A.M.A., Palmer House, Chicago, Ill.
- Apr. 18-21 (M-Th)—NATIONAL PACKAGING EXPOSITION (sponsored by American Management Assn.), International Amphitheatre, Chicago, Ill.
- Apr. 21 (Th, p. m.)—SOUTH CAROLINA DIV., S.T.A. (Riegel Textile Corp. as host), Ware Shoals.
- Apr. 23 (Sa)—Spring meeting (on opening, picking, carding and spinning), TEXTILE OPERATING EXECUTIVES OF GEORGIA, Hightower Textile Building auditorium, Georgia Institute of Technology, Atlanta.
- Apr. 23 (Sa)—SOUTHEASTERN SEC., A.A.T.C.C., American Legion Club, Lindale, Ga.
- Apr. 27-29 (W-F)—Annual convention, COTTON MFERS. ASSN. OF GEORGIA, Boca Raton (Fla.) Hotel and Club.
- Apr. 28-30 (Th-Sa)—Annual convention, DELTA KAPPA PHI Textile Fraternity, Lowell (Mass.) Technological Institute.
- Apr. 30 (Sa)—PIEDMONT SEC., A.A.T.C.C., Hotel Robert E. Lee, Winston-Salem, N. C.
- May 4-5 (W-Th)—Spring meeting, THE FIBER SOCIETY, School of Textile Technology, Alabama Polytechnic Institute, Auburn.
- May 4-6 (W-F)—Insurance conference, A.M.A., Hotel Statler, New York City.
- May 6-7 (F-Sa)—COTTON MERCHANDISING CLINIC (sponsored by Cotton Economic Research, Cotton Research Committee of Texas), Driskill Hotel, Austin, Tex.
- May 7 (Sa)—PIEDMONT DIV., S.T.A., Catawba Country Club, Hickory, N. C.
- May 9-14 (M-Sa)—NATIONAL COTTON WEEK (sponsored by National Cotton Council of America).
- May 12-14 (Th-Sa)—Annual outing, CAROLINA YARN ASSN., The Carolina, Pinehurst, N. C.
- \*May 14 (Sa)—SOUTH CENTRAL SEC., A.A.T.C.C., Hotel Patten, Chattanooga, Tenn.
- May 16-20 (M-F)—NATIONAL MATERIALS HANDLING EXPOSITION AND CONFERENCE (sponsored by American Materials Handling Society), International Amphitheatre, Chicago, Ill.
- May 18-20 (W-F)—NORTH CAROLINA INDUSTRIAL SAFETY CONFERENCE, Hotel Robert E. Lee, Winston-Salem.
- †May 20 (F)—WASHINGTON SEC., A.A.T.C.C.
- May 23-25 (M-W)—General management conference, AMERICAN MANAGEMENT ASSN., Hotel Roosevelt, New York City.
- May 26-28 (Th-Sa)—Annual convention, SOUTH CAROLINA TEXTILE MFERS. ASSN., The Cloister, Sea Island, Ga.
- June 2-4 (Th-Sa)—AMERICAN COTTON CONGRESS, Harlingen, Tex.
- June 3-4 (F-Sa)—Annual outing, SOUTHEASTERN SEC., A.A.T.C.C., Radium Springs, Albany, Ga.
- June 10-12 (F-Sa)—Annual outing, PIEDMONT SEC., A.A.T.C.C., Mayview Manor, Blowing Rock, N. C.
- June 16-18 (Th-Sa)—Annual convention, S.T.A., Mayview Manor and Green Park Hotel, Blowing Rock, N. C.
- June 25-July 10 (Sa-Su)—INTERNATIONAL TEXTILE EXHIBITION, Brussels, Belgium.
- June 26-July 1 (Su-F)—Annual meeting, AMERICAN SOCIETY FOR TESTING MATERIALS, Chalfonte-Haddon Hall, Atlantic City, N. J.
- ‡July 29-30 (F-Sa)—Outing, SOUTH CENTRAL SEC., A.A.T.C.C., Lookout Mountain (Tenn.) Hotel.
- Sept. 6-17 (Tu-Sa)—PRODUCTION ENGINEERING SHOW, Navy Pier, Chicago, Ill.
- Sept. 8-9 (Th-F)—Fall meeting, THE FIBER SOCIETY, Massachusetts Institute of Technology, Cambridge.
- Sept. 10 (Sa)—SOUTHEASTERN SEC., A.A.T.C.C., Ralston Hotel, Columbus, Ga.
- Sept. 16-17 (F-Sa)—Annual meeting, COMBED YARN SPINNERS ASSN., The Homestead, Hot Springs, Va.
- Sept. 20-21 (Tu-W)—CHEMICAL FINISHING CONFERENCE (sponsored by National Cotton Council of America), Chalfonte-Haddon Hall, Atlantic City, N. J.
- Sept. 22-24 (Th-Sa)—National convention, A.A.T.C.C., Chalfonte-Haddon Hall, Atlantic City, N. J.
- \*Sept. 29-30 (Th-F)—Annual outing, CHATTANOOGA YARN ASSN., Lookout Mountain (Tenn.) Hotel.
- \*Oct. 1 (Sa)—ALABAMA TEXTILE OPERATING EXECUTIVES, Thach Auditorium, Alabama Polytechnic Institute, Auburn.
- Oct. 13-14 (Th-F)—Annual meeting, NORTH CAROLINA TEXTILE MFERS. ASSN., The Carolina, Pinehurst, N. C.
- Oct. 17-19 (M-W)—Fall meeting, NATIONAL COUNCIL FOR TEXTILE EDUCATION (American Textile Machinery Assn. as host), The Larches, Hopedale, Mass.
- Oct. 27-28 (Th-F)—Annual convention, THE QUARTERMASTER ASSN., Conrad Hilton Hotel, Chicago, Ill.
- Oct. 29 (Sa)—PIEDMONT SEC., A.A.T.C.C., Hotel Barringer, Charlotte, N. C.
- Nov. 3-4 (Th-F)—Textile electrical conference, AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS, North Carolina State College, Raleigh.
- Nov. 10-11 (Th-F)—Annual meeting, CARDED YARN ASSN., Bon Air Hotel, Augusta, Ga.
- Dec. 3 (Sa)—Annual business meeting, SOUTHEASTERN SEC., A.A.T.C.C., Biltmore Hotel, Atlanta, Ga.
- \*Dec. 10 (Sa)—SOUTH CENTRAL SEC., A.A.T.C.C., Hotel Patten, Chattanooga, Tenn.

— 1956 —

- \*Jan. 30-31 (M-Tu)—Annual meeting, NATIONAL COTTON COUNCIL OF AMERICA, Biloxi, Miss.
- Apr. 5-7 (Th-Sa)—Annual meeting, AMERICAN COTTON MFERS. INSTITUTE, Hollywood Beach Hotel, Hollywood, Fla.
- ‡June 14-16 (Th-Sa)—Annual convention, SOUTHERN TEXTILE ASSN., Ocean Forest Hotel, Myrtle Beach, S. C.
- Sept. 10-12 (M-W)—National convention, A.A.T.C.C., Waldorf-Astoria Hotel, New York City.
- Sept. 10-15 (M-Sa)—PERKIN CENTENNIAL (sponsored by various professional societies and trade associations), Waldorf-Astoria Hotel, New York City.

\*Listed for the first time this month.

‡Tentative listing.

†Changed or corrected from previous issue.

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday; (Su) Sunday

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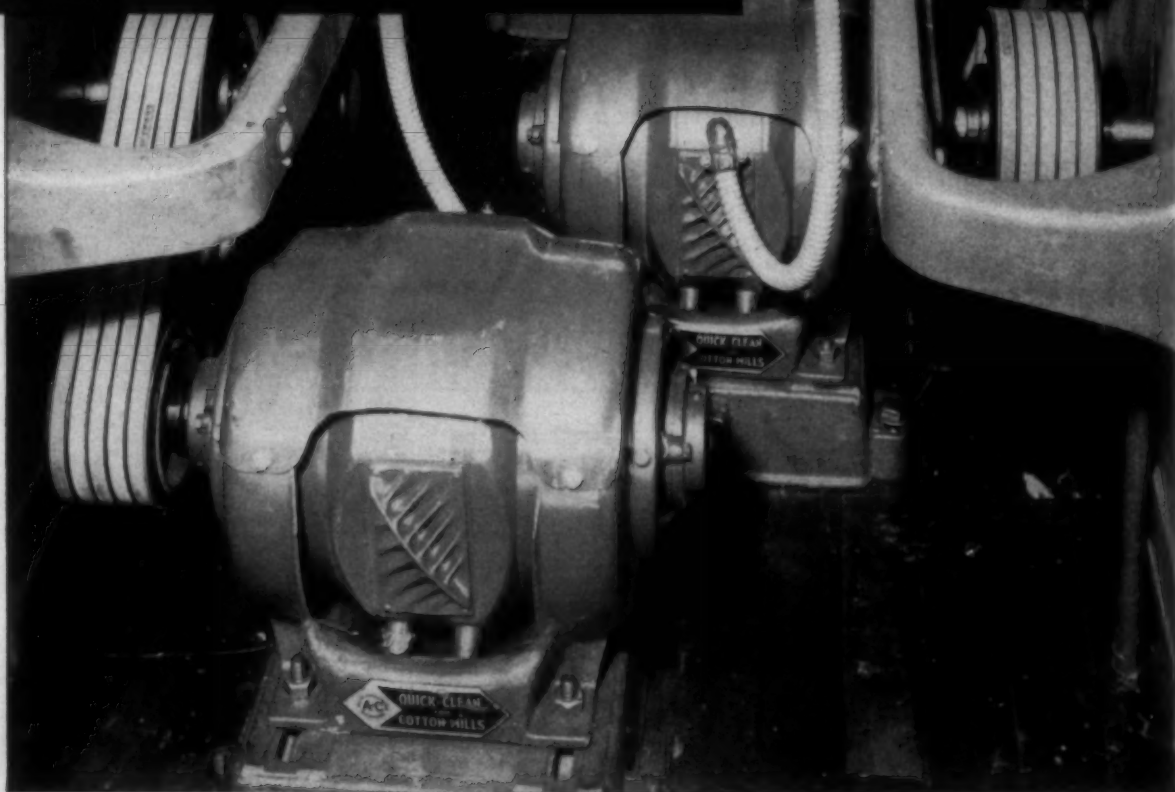
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## COMPULSORY UNIONISM & 'Right-To-Work' Laws

By E. S. DILLARD, President, Old Dominion Box Co., Charlotte, N. C.



THE controversy over compulsory unionism needs to be stripped of verbiage and examined as to its fundamentals.

The question which needs to be answered is a simple one: "Should a worker have to join a union in order to earn a living?" The answer would seem to be equally simple: "No!" Yet today more than 60 per cent of all labor contracts signed include some form of the union shop, which requires a worker to join a union within a stipulated time if he is to hold his job. The closed shop is outlawed by the Taft-Hartley Act. Under closed shop provisions a worker had to be a union member in order to get a job. But there is little difference between the union shop and the closed shop. Both are compulsory.

Years ago some employers required their employees to stay out of a union as a condition of employment. Naturally, workers who believed in unions, and many other citizens, disliked such conditions. They called an agreement whereby an employee agreed not to join a union a "yellow dog" contract.

With the passage of the Wagner Act early in the Roosevelt Administration, "yellow dog" contracts were outlawed and the ban was continued in the Taft-Hartley Act. It seems to me that the Congress should have been logical and should also have banned any labor agreement which required a union status as a condition of employment. This was not done. The Taft-Hartley Act, however, expressly authorizes the states to enact legislation which bans compulsory unionism. Seventeen states now have on their books so-called "right-to-work" laws. But in 1951 Congress, with comparatively little discussion of the principles involved, approved an amendment to the Railway Labor Act which permits the union shop on the railroads—regardless of the states which have laws prohibiting it. Today, most of the railroad unions have union shop agreements, and hundreds of workers who rebelled at being forced to join a union were fired and forgotten. Moreover, both the C.I.O. and A.F.L. today are making the state right-to-work laws their major issue. They are attacking these laws as anti-labor legislation. Little is heard of the repeal of Taft-Hartley which the labor leaders urged only yesterday on the grounds that it was a "slave labor" act.

The union leaders openly contend that all workers should be compelled to join unions. They argue that the worker

becomes a member of an economic society when he is employed and that the union is the organization or government of this society. If we state this argument in simpler language, this is what it comes to—unions are good for the workers; therefore, workers should be made to join unions. Non-union members should not be allowed to get the benefits gained for them by the union members who pay dues and maintain the unions. The way to get at these non-union members is to make them join the union. In other words, let there be no "free riders."

This argument has a surface plausibility but it is the argument that has been used by dictators throughout history. In Russia today opposition is suppressed on the grounds that it threatens the good which Communism—theoretically—is bringing to all the Russians. Hitler contended that a recalcitrant minority should not be allowed to undermine the benefits that national socialism was giving all Germany; Mussolini spoke in similar terms.

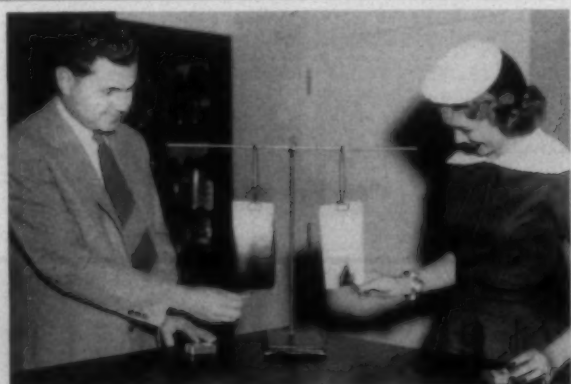
Most of us would agree that the churches are a good influence and that the country is better off for them. There are very few who would argue that church membership should be compulsory in order that the backsliders do not benefit free from the good work the members are doing. History has taught us that compulsion is the instrument of tyranny. The Communists laid out a scientific blueprint, leading ostensibly toward the heaven on earth. For a relatively short period, they said, there would be a dictatorship of the proletariat to prevent the capitalist nations and the exploiters from undoing the good of Communism. Only the dictatorship continues. It has brought about hell on earth and the end is not yet in sight.

Actually, the labor leaders who want the union shop extended to all workers are aiming at a labor monopoly. The union shop gives them control of their men. The membership is captive. The risk of being expelled from the union and losing one's livelihood is so great that the dissenters are few and far between. Theoretically, a worker can denounce the union shop, refuse to belong to the union and still hold his job. In practice, it just doesn't work that way. The employer who signs a union shop contract generally is responsive to the wishes of the union leaders. If a rebel loses his union status, the odds are overwhelming that, for one reason or another, he will lose his job also. Labor becomes a commodity to be bought and sold. The workers become

faceless men and their leaders become so powerful that eventually they will control the state.

Make no mistake about it, control of the working force of the nation means economic control of the country and economic control means political control. The triumph of compulsory unionism eventually means a labor dictatorship. Already the special privileges given the unions give them power that the Morgans and Rockefellers never had in their best days. For example, the unions are exempt from the anti-trust laws. They can—and have—closed vital industries in times of crisis and, in several well-known instances, the government capitulated. The extension of the union shop is the establishment of a government within a government; the unions are being given the governmental privilege of taxing and ruling—but they do not have the responsibility of government and the union officials cannot be turned out of office as elected governmental officials can be.

The spokesmen for compulsory unionism talk in terms of union security and say they need the union shop to prevent the unions from being wrecked. In view of the size and strength of the unions today, this contention has an element of humor in it. There are today approximately 17 million union members and the unions are expanding all the time. Their leaders are courted by politicians and industrialists; they control state and local governments, and the arrogance of many union leaders is the arrogance of men with great power who do not have the sense of responsibility which goes with it. The use of violence to gain their ends is common practice on the part of many unions. The alliance between some unions and the underworld is alarming and disheartening and equally disheartening is the alacrity with which many firms and industries accept the union shop. They feel they can do business with the union officials and frequently they do reach understandings with them without too much trouble. Frequently, these accords mean that the workers themselves are sold down the river. All too frequently the phrase, union security, means security for the labor bosses. Why the Meanys, Reuthers and Lewises, who stay in office year in and year out, secure in their jobs and perquisites, need compulsion to give them security is beyond ordinary logic.



**MAID OF COTTON VISITS NEW ORLEANS LAB**—Miss De Lois Faulkner, Maid of Cotton for 1955, is shown testing a sample of treated cotton fabric for flame resistance during a recent visit to the Southern Regional Research Laboratory, U.S.D.A., at New Orleans, La. The fabric, previously treated by the laboratory's THPC process, is charred only over a small area after being exposed 12 seconds to a match flame. Wilson A. Reeves, one of the developers of the THPC process, demonstrates that a piece of untreated cotton fabric will continue to burn once it is ignited.

The writer is chairman of the board of a recently organized group, the National Right-to-Work Committee. We are a group of small businessmen and workers who fear the results of compulsory unionism and who want to do what we can to eliminate it from our national life. We realize the magnitude of our task. Our resources are puny by comparison with the resources of the great unions. Our political influence is small in comparison to the influence of the labor leaders. The principle of compulsion is deeply embedded in unionism. Many employers, workers and citizens do not understand its implications. Comparatively little attention is given to the abuses which already have arisen from the union shop. The employees who believe in individual liberty and who fought for their rights were kicked out. One of these workers, Mrs. Amy Cook Rodgers, is a member of our Board of Directors. She was discharged by Pan-American World Airways because she refused to join the union after the company signed a union shop contract. She tried vainly in the courts to get her job back.

There is a great hue and cry about persons accused of subversion and insistence that their civil rights be protected. Many newspapers and prominent citizens have rushed forward to defend them. I think the civil rights of all American citizens should be protected but I marvel at the silence which envelops those sturdy individuals who rebel at being forced to join a union in order to be able to work. Their punishment generally is swift; there is little talk about their rights. They are not causes and their martyrdom is a lonely one.

Some persons feel that the way to deal with this situation is to pass more state right-to-work laws. We favor the passage of such laws but it is not generally known that a simple amendment to the Taft-Hartley Act will wipe them all out. All that is necessary is to approve a provision giving the Taft-Hartley Act precedence over the state laws. The unions are well aware of this. Sooner or later, they will make their move. Unless the people are aware of what is going on and what is involved, they are likely to succeed. Already, President Eisenhower's Secretary of Labor, James Mitchell, has come out against the state right-to-work laws. Apparently the President himself does not side with Secretary Mitchell, but it is not a healthy state of affairs when a cabinet officer recommends a special status for one group in our nation.

Our democracy is threatened when one group is given rights and privileges which do not belong to other groups. We do not want a dictatorship in the United States, whether it is a labor dictatorship, or any other kind. We want to keep this country the land of freedom and opportunity. We don't want our citizens to be enslaved, whatever the excuse given for the slavery. Citizens should have the right not to join a union, or to join a union as they see fit. Our group is going to do what little it can to keep that privilege for those who still have it. We are going to do what we can to extend it to those who have lost it.

#### **N.A.W.M. Schedules Annual Meeting**

John M. Hughlett, vice-president of J. P. Stevens & Co. Inc., has been named chairman of the arrangements committee for the 90th annual meeting of the National Association of Wool Manufacturers. The meeting will be held in New York City May 5 at the Waldorf-Astoria Hotel. While details are incomplete, the program will include election of officers, a luncheon and dinner.

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Adjustable U-Shield blades protect card webs or other critical areas from the air blast. This is particularly effective in cotton carding and intermediate areas, and in circular knitting, where it keeps stop motions thoroughly clean.

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Weekly blow-down of ceilings and machinery in this Card Room have been completely eliminated by the Allred Cleaner, as shown by this unretouched photograph taken after several months of cleaner operation. The ceiling had not been blown-down manually since the Allred installation, and none is anticipated in the future. The cleaner rotates a full 360° to clean the cards, as well as the ceiling and walls. Part of the U-Shield blades are closed to protect the webs.

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It would be safe to say that the rug people are operating in Greenville, and then name the state. Carpet manufacturing firms now have plants in the Greenvilles of Mississippi, North Carolina and South Carolina as well as elsewhere in the South. Increased manufacturing of floor covering means that the . . .

## South's Economic Flower Garden Has A New Bud

FOR some time now there have been those who, noting certain "straws in the wind," have been interpreting them as meaning the carpet manufacturing industry must ultimately relocate in the South along with other textile and textile-related industries. Indeed, they might look around currently and conclude that the exodus of the old-line companies in the East has already started.

Regardless of that, however, the Southeast is very dramatically becoming a vastly greater part of the floor covering industry. This new economic bud in Dixie's textile flower garden, however, is due not so much to the shifting of a few wool carpet manufacturing operations to the land of cotton, but to the rather spectacular—and growing—acceptance of tufted carpeting, even room-size and wall-to-wall.

The rise of this tufted industry has created one of the most notable new uses for Dixie's principal agricultural commodity, cotton. And various new developments in machinery and processes indicate even greater consumer acceptance lies ahead for this type of floor covering which is made almost altogether of cotton, though some of the synthetic fibers have lately been inching into the field.

There's a great deal of expansion of carpeting manufacturing facilities, both tufted and woven, in the Southeast currently, with still more certainly to come. There hasn't, of course, been any exodus of the wool carpet manufacturers from the East since Alexander Smith Inc., one of the biggest operators in the field, closed its Yonkers, N. Y., plant last year and shifted operations to the South, except for its Philadelphia plant where its Wilton fabrics are made.

There are many who believe, however, that the fact the Southeast is rapidly becoming—particularly in the last few years—an appreciably larger part of the woolen and worsted industry, and that the first large wool combing operation in the region went into operation last year, with another now a-building, can have very important bearing on the location of more woven carpet mills in the Southeast.

The first facility in the South to process raw or grease wool for the mills is the big plant built at Johnsonville, S. C., by Nichols & Co., Boston topmakers, primarily from the standpoint of convenience in serving Southern mills. The Johnsonville subsidiary is known as the Wellman Combing Co. and is headed by Arthur O. Wellman, who has said frequently he sees a great future in the South not only for the woolen and worsted industry but sheep-raising as well.

The full details have not been made known but announce-

ment has just recently been made that the Art Loom Carpet Co. of Philadelphia has acquired a tract of land on the Lynches River between Florence and Effingham in South Carolina and will erect a plant there in the near future. Mr. Wellman is a director in the Art Loom subsidiary which has just obtained a South Carolina charter and plans to build a plant in the same county where the Wellman combing operation is situated.

Art Loom, which has a large weaving operation in Philadelphia, makes Wilton and Axminster rugs and also cotton and rayon broadloom carpets. A subsidiary, Greenville (N. C.) Mills, manufactures woolen carpet yarns.

James Lees & Sons was the first old-line Eastern carpet manufacturer to launch a large-scale Southern operation, acquiring a plant in Virginia a few years ago to make woolen rugs. The next dramatic development in this respect was the decision of Alexander Smith Inc. to build a huge new plant near Greenville, Miss., right in the heart of the rich Delta cotton country, to make Axminster carpets.

This air conditioned plant, with 15 acres of floor space, is probably the industry's finest carpet plant and is situated farther south and west than any other carpet plant in the nation. Employing some 600 people, it is on three-shift operation, and total employment eventually is expected to go higher. The immense plant is a completely integrated operation.

Then, last year, the 109-year-old Alexander Smith firm, after prolonged labor trouble, closed out operations in its big Yonkers, N. Y., plant which officials said could no longer be run economically, and subsequently acquired in Liberty, S. C., a post-war plant built—and never used—by Julius Kayser and Co. Here velvets are woven and finished in an operation involving about 450 employees. Originally there were about 52,000 square feet of manufacturing space in the former Kayser plant. But immediately upon acquiring it, Alexander Smith built an addition of about 38,000 square feet. The entire plant is one-story, windowless and air conditioned. The current extension of the old-line companies' operations southward, however, in general stems from the serious and growing threat from tufted carpet manufacturers in Dixie, and they are building or acquiring Southern plants to manufacture these floor covering lines themselves.

For instance, Mohawk Carpet Mills Inc., of Amsterdam, N. Y., one of the nation's largest carpet manufacturing firms, only last year built a plant in Dillon, S. C., to make



tufted cotton carpets. This subsidiary, Dixiana Mills, embraces another tufted plant at nearby Laurinburg, N. C.

Now the Dixiana plant at Dillon, which went into operation only last September, is undergoing a major expansion. Manufacturing facilities are being increased by 35,000 square feet and a new boiler plant is to be built on the premises. The original Dixiana plant contained about 130,000 square feet of floor space.

Such growth and expansion in this field, if it isn't to be called a typical example, is indicative, nevertheless, of the growth throughout the Southern cotton carpet industry. At the opposite end of the state in Greenville, Belrug Mills, which makes cotton and synthetic fiber carpets, is doubling its present capacity by erecting a \$400,000 plant addition.

Merely to cite one more example, since Bigelow-Sanford Carpet Co. acquired the Georgia Rug Mill at Summerville, Ga., a little over three years ago, two large expansion programs have been completed there, one including the construction of a new power plant.

The manufacture of tufted carpeting is, of course, a purely Southern operation. Though tufted rug mills are beginning to spread over the larger part of the Southeastern textile area, the heaviest concentration is in the North Georgia-Chattanooga area, the birthplace of the chenille industry.

However, the old-line carpet manufacturing concerns in the East have been and are losing no time in acquiring or building or obtaining controlling interest in plants in the South making tufted rugs, and the trend seems to be accelerated at the moment. Furthermore, plants of this type are being rapidly expanded, sometimes to the point of a doubling of capacity.

Generally the woven carpet industry in the last few years has been somewhat in distress, though more recently the distress signs have begun to fade, with the lowering of big inventories in mills and stores. Some of the story can be read in the figures of the Department of Agriculture which show that use of carpet wool in 1954 declined to 115 million pounds from 136 million pounds in 1953, and that the average weekly rate of mill consumption was down 14 per cent in 1954 from 1953.

However, many in the industry feel that high employment, continued new home construction at peak levels, population growth and high consumer purchasing power all augur well for the immediate future of the floor covering industry. The intriguing and unanswered question is, of course, how much further current trends, occasioned by the

advent and popular acceptance of tufted carpeting, will extend.

While the rise of the tufted rug industry and the relocation of some few woven carpet mills in the Southeast in the last few years have given the land of cotton a large and important stake in the floor covering field, the rug industry has never been an entire stranger to the region.



Tufted carpeting represents one extreme in the price range. At the other, for many years the Karastan rug mill of Fieldcrest Mills in North Carolina has turned out, in a limited and highly-specialized operation, replicas of original and priceless Oriental rugs which confound everyone but the experts.

As to physical and economic structure, the tufted industry has developed from a sprawling, non-integrated mass of numerous small businesses into today's multi-million dollar plants, equipped with modern and vastly improved machinery.

Statistics that reflect the spectacular growth of tufted carpet manufacturing are none too plentiful. However, production prior to World War II probably did not exceed three million square yards a year and the output was mainly bath mats and sets, whereas current production represents a thirty-fold increase, and a large part of it consists of room-size and wall-to-wall carpeting.

The tufting processes are becoming increasingly flexible—and spectacular. For instance, there has lately been developed a process that permits curved designs instead of merely geometrics in loop pile tufted broadlooms, multiplying endlessly the design range.

As one producer recently put it, there are tufted carpet machines today which can write your name in the middle of a carpet and then in about ten minutes can be changed to write something else in an entirely different script. Modern tufting machines can change creels in one hour and run entirely different staples and colors.

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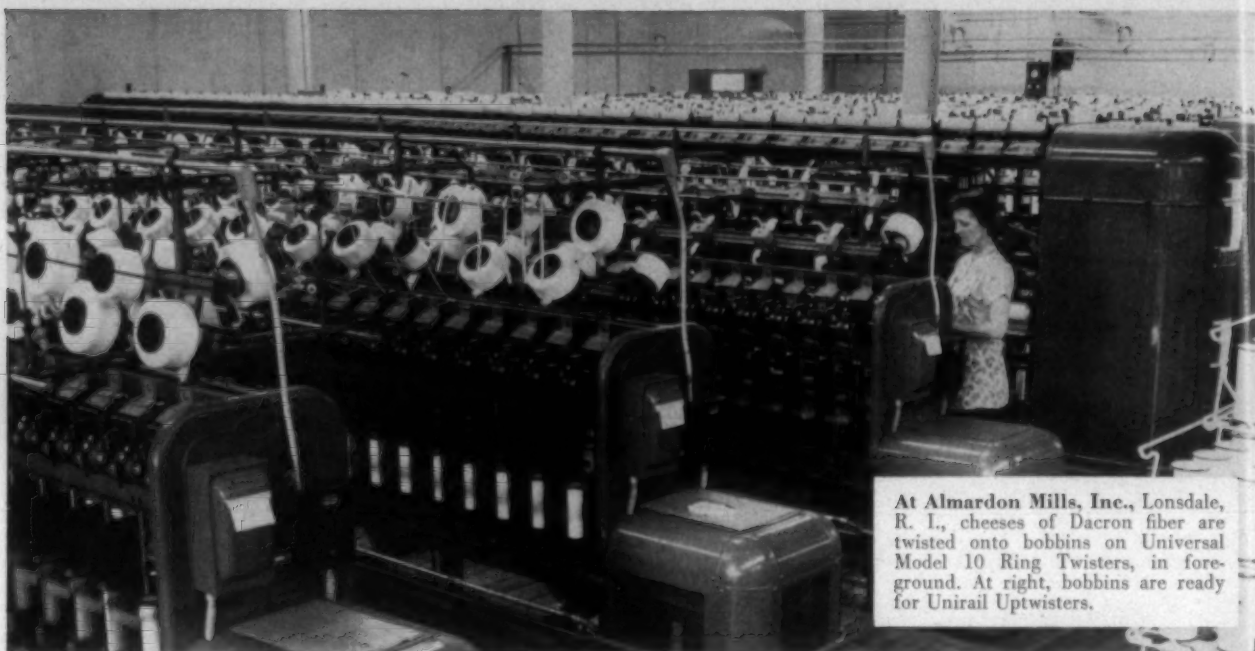
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At Almardon Mills, Inc., Lonsdale, R. I., cheeses of Dacron fiber are twisted onto bobbins on Universal Model 10 Ring Twisters, in foreground. At right, bobbins are ready for Unirail Uptwisters.

## Almardon Mills Solves the Dacron-Twisting Problem

*Increases production of top-quality yarn to a new high —  
cuts costs to a new low — with Universal equipment.*

Supplied with zero twist, and requiring a high final twist, Dacron has introduced new throwing problems to mills processing this new fiber.

Almardon Mills was no exception. Using its previous equipment, this well known producer of fine quality Dacron piques and lenos was redrawing 70 denier Dacron from cheeses to bobbins, then throwing 20 turns of twist on 12 ounce package uptwisters. Uptwisting speed was slow, the filaments opened, and breakage was high. Flyers were necessary, and due to the abrasive action of Dacron, had to be replaced at every doff. And, if relaxed yarn was required, the added cost of rewinding was necessary.

Here, in the words of Chester H. Boyce,  
Almardon Vice President,  
is how this mill solved the Dacron problem:

"We worked out a process with Universal, combining their Model 10 Ring Twisters with their new Unirail® Headless Package Uptwisters. This changed the picture

completely. With the Model 10 creels we can insert two turns of twist direct from the cheeses without redrawing. High speed uptwisting is then possible without separation of the filaments. And the Model 10 bobbins are the ideal supply for Unirail Uptwisters.

"Our Unirail Uptwisters put in remaining 18 turns at 14,000 r.p.m. without flyers. And right there we've cut down labor costs and boosted production. No more flyer replacements, and breakage is practically nil.

"Now, with our Universal combination, we're producing big pound-and-a-half Dacron packages — headless packages with *controlled relaxation of the yarn* without rewinding. In our experience, this is the best package you can get for delivery to warping and quilling."

If you are one of the many mills now working with Dacron, why not investigate how this Universal system can improve your own production picture? For helpful information on this — or on any other twisting or winding application, see your Universal representative.



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## *Opening, Picking, Carding & Spinning*

# Research Clinic Offers New Therapy, Improved Treatments For Cotton Processing Problems

The National Cotton Council's annual Cotton Research Clinic might be described as a "middle-brow" meeting, of interest to those concerned with actual textile manufacturing as well as scientists who indulge in pure research. Here's a staff report on what came out of last month's meeting.

THE controversy over compulsory unionism needs to be National Cotton Council of America maintained its reputation as one of the industry's most worthwhile technical meetings when held Feb. 16-18 at The Carolina, Pinehurst N. C. Acting as general chairman of the clinic was M. Earl Heard of Shawmut, Ala., vice-president in charge of research for West Point Mfg. Co. The 1955 clinic was divided into five sessions, the first of which was presided over by Emmett W. Bringle of the National Cotton Council.

### Research at the Card

John F. Bogdan, director of the processing research division at North Carolina State College's School of Textiles, led off this session with his paper on "Studies On Waste Reduction in Carding," a report of which was published in the February issue of this journal. (Note: Jack Bogdan has been subjected to a degree of good-natured kidding relative to the recommended mote knife location apparently indicated by Fig. 4 on Page 79 of our February issue; be it known that Professor Bogdan does not pretend to hang a card from the ceiling—the illustration was inverted in our pressroom).

E. Allen Bentley, Swift Mfg. Co., Columbus, Ga., reported on Swift's experience with Mr. Bogdan's project in a paper entitled "Mill Application of N. C. State Card Waste Studies." Mr. Bentley reported that Swift began serious work on the project last Spring and Summer. To begin with, every effort was made to stay as close as possible to the settings and applications set forth by N. C. State. This could not be done, they found, and, as pointed out by Mr. Bogdan, his data is merely suggested, not specified. Mr. Bentley went on to explain some of the variations Swift employs as opposed to standards introduced by the college. The tests were made on ten cards and the company now plans to go to 100 cards with the settings. Once converted, the cards are expected to save an estimated \$35,000 a year. This figure will, of course, vary with other mills, depending on the amount of waste now being run.

"While in some cases we were not able to get as good

results as were gotten at North Carolina State, in other cases we were able to better their settings, but over-all you will find that there is only 8/1000 difference between the results obtained at our mill and at N. C. State, and that actually these 8/1000 were in favor of the mill. We would like to say that we are well satisfied with the results; our yarn really looks a little cleaner, and we can find no detrimental effects, and we are sure that the management of our mill will be well satisfied with the resulting savings."

Following Mr. Bentley's paper, he, Mr. Bogdan and George Bass, who is manager of Swift's standards department, answered questions from the audience. One inquiry, directed at Mr. Bogdan, was whether or not all tests had been conducted on the Saco-Lowell card and, if so, would the settings work equally as well on other cards. Mr. Bogdan reported that although the tests were primarily conducted on Saco-Lowell machines, other cards were used and no appreciable difference in effectiveness was noted. Mr. Bass added emphasis to this by pointing out that Swift had included, in the ten cards used for the test, both Saco-Lowell and H & B cards and had noted no variation.

The next speaker was Hugh M. Brown, dean of the School of Textiles, Clemson (S. C.) College, who spoke on "Some Methods of Reducing Carding Wastes." The project grew out of the work reported last year on reversing the direction of running card flats. That study pointed out that



Bringle, Buck, Lederer

The general manager (George S. Buck Jr.) of the Cotton Research Clinic and his two superintendents (Emmett W. Bringle and Robert F. Lederer), all with the National Cotton Council's technical department.

## OPENING, PICKING, CARDING & SPINNING

running the flats in reverse brought out many pieces of seed coat, trash and light tufts of unopened cotton, all of which in normal operation go on through the card. More of such trash, etc., can be brought out by running the flats faster in the reversed direction, Dean Brown pointed out, but, of course, this also increases the white waste in the flat strip. A plan was proposed in which the flats were to be run in two sections. One, a very short section at the rear would be run at relatively high rate and the other main section to be run very slowly. The short section would bring out large amounts of trash and seed coats as well as much lint. But it was planned to put the strip from this section back with the ingoing stock to be reworked by the licker-in. It was hoped the regular flats, never receiving the large pieces of trash, might make less neps and certainly less waste.

Since, however, the dividing of the flat section into two parts would involve considerable change in the card construction, it was decided to use a properly-clothed cylinder mounted between the licker-in and the regular flat section. This cylinder would be run in the opposite direction. It was then decided to let the waste removal cylinder be stripped by the licker-in itself. Proper settings were arrived at after much experimentation. Several effects were noted:

(1) For the normal licker-in speed there was: (a) an increase in motes in flat strip, in cylinder strip and in the sliver, but only a small reduction of motes in the licker-in waste; (b) a large reduction of lint in the flat strip, cylinder strip and in total lint loss; (c) lower lint loss in the mote box with higher mote box pressure; and (d) a slightly higher nep count.

(2) For the high-speed licker-in there was: (a) more motes in cylinder strip, in sliver and no change in motes for the licker-in waste and less motes in flat strip giving a very slight decrease in total motes removed by the card; (b) a considerable reduction of lint in all forms of waste except cylinder strip; and (c) a large increase in neps.

(3) The flat strip was free of large pieces of trash and unopened cotton. Dean Brown pointed out that it is not thought that impairment of the sliver of yarn is inherent with the method. Yet to be tried are such things as different speeds, settings, types of clothing, different arrangements of air flow and shape of housing, etc.

Stuart H. Sherman of United States Rubber Co., Winnsboro, S. C., followed Dr. Brown with a paper entitled "High Production Carding," in which he outlined the methods used by his company in seeking increased carding production. To avoid troubles with high doffer, comb and comb box

speeds, another coiler was added to the card and the web was split by dropping a steel ribbon down between the doffer and cylinder. A standard attachment for feeding two laps was added to the card, enabling a doubling of production without changing the speed of any part. Two 15-ounce laps were fed into the card and two 50-grain slivers were delivered at the front.

To overcome bunch plucking at the licker-in, the regular feed roll was replaced with a special feed roll having deeper flutes. Eighteen pounds of weight were added to each side of the roll and a Saco-Lowell control roll was substituted for the top mote knife. Other changes made included increasing the licker-in speed to 650 r.p.m.; increasing the cylinder speed to 203 r.p.m. with the production gear changed to maintain the original feed roll and doffer speeds; changing the flat pulley to maintain regular top flat speed; and installing perforated screens to eliminate air turbulence with the higher cylinder speed. Total cost of these changes was estimated at about \$1,100 installed. Two changes in settings were necessary, .045 inches from feed plate to licker-in, and .007 inches from control roll to licker-in. These settings allow the cotton to be released by the feed roll before it is injured by the licker-in and the control roll holds it until the bunches are divided and distributed over the surfaces of the licker-in and cylinder.

Later, the lap feeding device was modified to avoid using extra floor space. The second lap was fed from a roll placed above the regular lap roll and supported by the rods which normally hold the lap waiting to be creeled. These modifications produced the following results using Middling one-inch cotton: (1) production was doubled—from 9.6 to 19.2 pounds per hour; (2) neps were reduced 30 per cent; (3) sliver was more even; (4) yarn had equal or better strength; and (5) waste was reduced.

## Looking at Spinning

The second technical session was held on the afternoon of the 16th, presided over by W. Gordon McCabe, J. P. Stevens & Co. Inc., Greenville, S. C. The first speaker was Burt Johnson of the National Cotton Council, who spoke on "Pima S-1—Spinning Tests on a New American-Grown Extra-Long Staple Cotton." He pointed out that 14 plants making a wide range of yarn numbers had co-operated in commercial spinning tests of Pima S-1. Egyptian-grown Karnak was generally used as the control cotton. The fiber properties of Pima S-1 showed it to be slightly shorter and slightly weaker than Karnak, but it is coarser and has superior fiber length uniformity as compared to Karnak. In the



They discussed carding . . . John F. Bogdan, E. Allen Bentley, Hugh M. Brown and Stuart H. Sherman.

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We'll convert your 10" and 12" comber and card coilers to 14" or 15" and drawing frame coilers to 14" in diameter and to 36" or 42" in height. Just imagine what this will do to increase the amount of sliver per can! What's more, and as the photograph shows, you'll get a perfect lay of sliver in the can.

The GOSSETT MACHINE WORKS has already converted the coilers in a number of leading Southern textile mills. Records show a very substantial increase in the amount of sliver per can. It will pay YOU to look into this amazing innovation.



**Note this:** We show here the percentage increase of sliver when a conversion is made. Take, for example, a 12" x 36" coiler. We'll convert it to any one of the following sizes and here is what you'll get:

Up to This Size	Percentage of Sliver Increase
14" x 36"	60% to 65%
14" x 42"	100% to 105%
15" x 36"	100% to 105%
15" x 42"	120% to 125%

This shows the perfect lay of the sliver in can after coiler conversion from a 12" x 36" size to a 15" x 42" size.

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This coiler was converted from a 12" x 36" size up to a 15" x 42" size, increasing the amount of sliver in can by 120% to 125%.

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GASTONIA, NORTH CAROLINA



## OPENING, PICKING, CARDING & SPINNING

manufacturing factors of waste losses, noils removed and ends down, Pima S-1 was found to be equal to or slightly better than Karnak. Although Pima S-1 appeared to make fewer neps than previous commercial strains of American-Egyptians, it usually makes a few more neps than Karnak. All mills were uniformly successful in making stronger singles yarns from Pima S-1 than from Karnak. The average yarn strength increase was 14 per cent. Yarn grades were equal to or better than those made from Karnak. On the average, plied yarns made of Pima S-1 were 13 per cent stronger than were those made of Karnak.

Louis A. Fiori of the Southern Regional Research Laboratory at New Orleans, La., reported next on "Evaluation of Yarn Properties and Processing Performance of Pima S-1 Cotton." The report was the result of a project developed by Mr. Fiori, John J. Brown, Nathaniel A. Howell and Jack E. Sands, all of S.R.R.L. Results were reported of a pilot plant evaluation of Pima S-1 cotton using Karnak and Pima 32, Egyptian and American-Egyptian varieties, respectively, as controls. The three cottons were processed alike on conventional equipment into a range of relatively fine single and two-ply yarns.

Certain organizational details were varied within limits to aid in the evaluation of the processing performance of the three cottons, and to determine the contributions each cotton made toward product quality. Each cotton was divided into three lots which were carded at four, six and eight pounds/hour, respectively. Each lot was then combed with 15 per cent and 18 per cent noils being removed. Twist-strength relationships were determined by spinning the yarns with a range of twist multipliers from 3.00 to 4.00 in increments of 0.25; draft-strength relationships, by spinning the yarns with a range of drafts from 14 to 53 using the twist multiplier found previously to produce maximum strength. The effect of the method of creeling was determined by spinning the same yarn number from a series of hank rovings both single and double creeled. Evaluation was made of gain in strength of two-ply over single yarns using the same twist multiplier in both single and ply yarns. Also, an assessment was made of the response of these three cottons to three conditions of mercerizing and to subsequent dyeing.

An analysis was made of opening, picking and carding waste percentages and of the uniformity of slivers and yarns. Yarn quality was determined by measuring skein and single strand strengths, elongation and appearance, and from the coefficient of variation of the strength values and Uster uniformity tester measurements. It was found, Mr. Fiori

pointed out, that the general processing performance of the Pima S-1 was equal to that of the Karnak and Pima 32 cottons. Regardless of the organizational variables used in the evaluation, the Pima S-1 cotton produced yarns of better appearance and uniformity than did the other two cottons. Also, yarns made from Pima S-1 were stronger than those made from Karnak and were generally equal in strength to yarns made from Pima 32. Double creel produced stronger and more uniform yarns than did single creel spinning for all of the cotton varieties tested, he pointed out. The performance of Pima S-1 in two-ply constructions was equal to that of the two control cottons. The general response of Pima S-1 to mercerizing and to subsequent dyeing was slightly better than the other cottons.

William R. Keyser Jr. of the Institute of Textile Technology, Charlottesville, Va., speaking on "Gin Overdrying—Its Affects on Cotton Processing and Yarn Quality," reported the findings of an I.T.T. project aimed at determining whether or not the drying of seed cotton is being carried to an excess by the ginner. Mr. Keyser pointed out that, as a result of the increasing use of mechanical pickers and the desire of the farmer and ginner to produce higher cotton lint and cotton seed grades, the use of artificial seed cotton driers has increased to the point where 80 to 90 per cent of the cotton ginned in this country passes through gin seed cotton driers. Four co-operating institute member mills carried out full-scale mill tests, using the same type cotton and four treatments—no heat, low heat, high heat and high heat recycled. Average storing periods were used prior to processing.

The tests produced the following information. Does overheating of cotton during gin-drying affect mill processing? The answer, Mr. Keyser pointed out, is an unqualified "Yes." What is the economic importance of damage caused by overheating of cotton during gin-drying? Comparative cost data was furnished by only one of the participating mills. In this case there was a differential of \$200,000 annually for spinners' and weavers' costs alone between the no heat and high heat recycled ginned cotton. Mill management estimated an over-all differential of no less than \$300,000 annually in processing cost between the two extremes, or about \$10 per bale. What effect has overheating on yarn quality? (The study used break factor and the per cent non-uniformity as primary criteria.) The result showed that yarn break factors decreased and the per cent non-uniformity increased with increasing gin-drying temperatures. One mill found a definite trend toward increasing neppiness with increasing severity of gin drying. Some changes occur in the cotton fiber as a result of overheating during gin drying.



On the spinning program . . . Burt Johnson, Louis A. Fiori, William R. Keyser Jr. and Helmut R. Wakeham.

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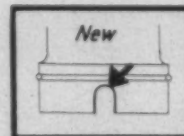
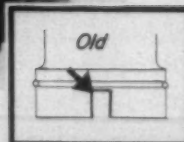
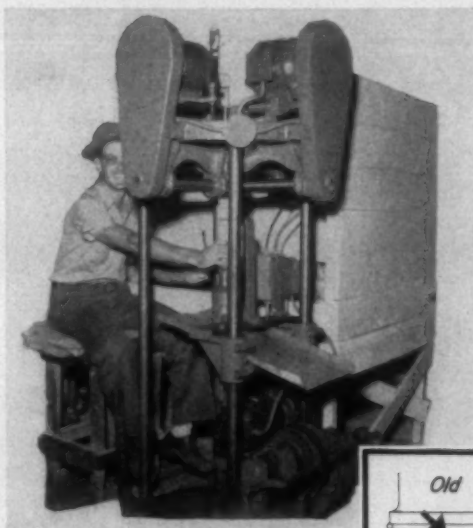
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loss of moisture (largely regained prior to spinning); differential dyeing effects (indiscriminate mixing of variously gin-dried cottons can lead to warp and filling streaks in dyed, finished cotton fabrics); no loss of tensile strength, although single fiber breaking strength decreased with increasing severity of gin-drying; no significant differences in Micronaire fineness; a significant increase in fiber drag in sliver form with increasing severity of gin-drying. It was pointed out that while recycling of cotton, particularly at the higher temperature employed in the study is not the usual ginning practice, it is known that a portion of the cotton in most bales is recycled as a result of overflow at the gin stands, and even when lower gin-drying temperatures are used, this cotton may cause processing difficulties in the mill, a high coefficient of variation in yarn count, a long break factor, and warp and filling streaks in finished goods.

Helmut R. Wakeham of the Textile Research Institute, Princeton, N. J., concluded the second technical session with a paper on "Influence of Fiber Length Distribution on Cotton Processing and Yarn Quality." Dr. Wakeham pointed out that recent cotton processing studies conducted



Heard, Hallett

M. Earl Heard, general chairman of the 1955 Cotton Research Clinic and vice-president in charge of research for West Point Mfg. Co., is pictured with H. K. Hallett, vice-president of The Kendall Co. and general manager of its Kendall Cotton Mills Division at Charlotte, N. C. In a special after-dinner address at the clinic, Mr. Hallett suggested a broad research program into the public's wishes, whims and basic psychology in buying habits as a means for the textile industry to regain its former share of the consumer dollar.

A bargain price can't be the whole answer, since fabrics and clothing are the lowest priced items on the lists of essentials making up the consumer price index, Mr. Hallett pointed out. He observed that while other major U. S. industries experienced a near-record year in 1954, textile mills have been operating on a depression level. The key to the matter, he said, is the fact that the consumer just isn't spending as proportionately large a share of his dollar as formerly for textile goods, and is spending a larger share than he used to on other goods and services. He proposed that the textile industry as a whole make the same kind of effort for textile products in general that the National Cotton Council is doing for cotton in particular.

by T.R.I. had demonstrated that the presence of a large number of short fibers in cotton causes appreciable increases in processing wastes, excessively uneven rovings and yarns, less efficient spinning and weaker yarns than would otherwise be expected. He outlined various methods of measuring fiber length distribution and of indicating excessive quantities of short fibers in the sample. Four case histories demonstrating the inferior quality of cottons containing excessive quantities of short fibers were described, showing the effects of improper drying prior to ginning, overprocessing during cleaning and microbiological attack (Cavitoma). In all cases the importance of fiber length distribution as a cotton quality factor was emphasized, both from the processing facility and yarn quality points of view.

Dr. Wakeham pointed out that differences in fiber length distribution which seems to account for the differences in cotton quality indicated are not readily detected by measurement of upper quartile length, length uniformity or similar measurements now being made in mill or cotton testing laboratories. Part of this failure, he noted, is due to the practice of considering only weight-length distributions. The general attitude that since the short fibers in the sample don't weigh much they can be ignored is misleading, since they do matter more than their weight implies. Number-length distributions or number fractions, he noted, present the advantage that it is more difficult to ignore the short fibers than it is with weight-length distributions. The method whereby number-length distributions may be calculated from length-fineness array data is too cumbersome and time-consuming for routine mill testing, he said, and a more efficient method of evaluating the short fiber content in a cotton is now being sought by T.R.I.

## Quality Control Round-up

The clinic's third technical session was held Thursday morning, Feb. 17, with Herman A. Dickert, dean of the School of Textiles, Georgia Institute of Technology, acting as chairman.

The first speaker for the session was K. L. Hertel of the Agricultural Experiment Station, University of Tennessee, Knoxville, whose paper was entitled "Speedar Measurement of Fiber Fineness and Compressibility." The speaker pointed out that the industry's interest in cotton fiber fineness and maturity has increased significantly with the advent of rapid instruments using air flow to measure these properties. Seeking an instrument that would give precise measurements of fineness without weighing the sample, his laboratory has developed an instrument that replaces a fixed weight sample by a weighed sample to which the instrument is readily adjusted. This cuts down on the time of the weighing operation, it was pointed out, and both fineness and compressibility are obtained. The instrument is called the Speedar. Describing the instrument and its air flow pattern, Dr. Hertel pointed out (1) the Speedar is a self-contained air flow instrument using low pressure differential for measuring the specific area or fineness of fibers without altering the relative humidity surrounding the fiber; (2) it also measures a new property called modulus; (3) it tests a five to ten gram sample and is sensitive to fiber orientation; (4) it is rapid and simple to operate (no attempt has been made to determine the number of samples that can be measured per unit of time); and (5) the reproducibility of fineness measurements is as good as any other air flow instruments.





Quality control was their line . . . Kenneth L. Hertel, Oliver P. Beckwith, Joe L. Delany and Charles C. Wilson

Oliver P. Beckwith of Fabric Research Laboratories Inc., Boston, Mass., followed Dr. Hertel, with a paper on "Management of Quality Control in Cotton Manufacturing." The speaker pointed out that the control of quality is a four-step operation: (1) the setting of standards; (2) measuring conformance to standards; (3) initiating corrective action; and (4) planning improvements. To achieve the most effective program of quality control, he said, requires that management combine all factors affecting quality into a positive, plant-wide organization. This will include everything from workers to company policies, he noted, since all these factors affect quality. The speaker also pointed out that, aside from company-wide quality maintenance activities, a good quality control department set up under an effective quality control program will have three specific responsibilities—testing function, prevention function and assurance function—as well as a co-ordinating responsibility. Mr. Beckwith also discussed (1) the quality control department and the organization chart; (2) the manager of the quality control department; (3) the introduction of the department into the organization; and (4) evaluating the effectiveness of the department in terms of cost, results and effect on profit margin.

Another paper on management quality followed Mr. Beckwith's, with Joe L. Delany, general superintendent of Joanna (S. C.) Cotton Mills Co., giving a report on "Joanna Mills' Quality Tests and Variation Control Methods." Mr. Delany pointed out to the meeting that there is no known easy road to absolute uniformity in cotton yarns. It takes the full-time efforts of a good-sized staff equipped with a lot of expensive but necessary scientific apparatus, he said. He then reviewed in order the actual tests used by Joanna from the entry of baled cotton into the mill through tests conducted in the cloth room. The scope of these quality tests point up the fact that Mr. Delany, like E. Allen Bentley of Swift Mfg. Co. and others, is fully aware of the dividends available through management quality control. Concentrating as it does on production for Joanna Western Mills Co., a guaranteed market, Joanna could be less concerned with quality control than mills whose entire production is sold on the open market. But Joanna is concerned and, judging from Mr. Delany's remarks to the meeting, satisfied with returns it is getting from the time, money and effort invested.

The final paper of the third technical session was presented by Charles C. Wilson, West Point (Ga.) Mfg. Co., who discussed "Management of Quality—Studies on Cotton Yarn Imperfections." Mr. Wilson described the use of the Neptel electronic evenness tester, developed by West Point

and marketed by Sheffield Corp., for quantitatively indicating yarn imperfections. He pointed out that the use of the Neptel eliminates the variety of factors affecting human judgment in grading yarn quality. He also described a series of tests that the instrument had been subjected to by the research division of West Point.

#### Final Session

The fifth and final technical session was held on Friday morning, Feb. 18, with Thomas G. Hawley of United Merchants' Laboratories presiding. Leading off the speakers at this session was Dr. Hugh M. Brown of Clemson, making his second appearance as a speaker. His topic, "Effects of Colloidal Silica on Cotton Processing Characteristics and Yarn Quality," was a progress report on a study of the effects on cotton processing produced by increasing the inter-fiber friction by use of additives such as colloidal silicas and other compounds. Assisting Dean Brown in the preparation of the paper were J. H. Langston and W. T. Rainey Jr. of the Clemson laboratory. It was pointed out that out of approximately 100 different additives tested on DPL cotton, results showed that colloidal silica and titanium dioxide treatments gave the greatest increase in the frictional forces. Later test treatments seemed to show that from an economical point of view preparations of colloidal silica would be more practical than those of titanium dioxide, and the remainder of the study was limited to these compounds.

In testing the treatment, picker laps of six different cottons having a wide range of physical characteristics were treated. For every piece of lap treated, an adjacent similar piece was used untreated as a control, with both kept together throughout processing and testing. Extensive tests were conducted at each stage of the processing, from picker lap to single and plied yarns. Both the treated and untreated cottons were run through drawing with standard settings and then the treated was run again with a higher and lower value to determine optimum settings for the treated stock. The procedure was repeated for each of two types of roving frames using the sliver from the best drawing, and similarly repeated on two types of spinning frames using the best roving. At the spinning stage, evenness, skein strength and single-end strength were all used as criteria for selecting the best settings. Control yarns and treated yarns from both spinning frames were twisted into 36/2 and 22/2 yarns and tested for strength by both skein and single-end tests.

In conclusion, Dean Brown reported that the study seems to show that with cotton having a considerable range in

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physical properties, definite improvement in processing can be had by the use of additives to increase the frictional characteristics of the fiber. He pointed out that stronger and more even yarns can be produced. This, he noted, would probably result in fewer ends down. Greatest processing improvement was shown for cotton having the shortest staple. Machine settings to produce optimum evenness were not found to be very different from those for untreated stock except that higher roll weighting seemed to be required. The Saco-Lowell and Whittin roving and spinning frames used in the test showed nearly equal results on both 22s and 36s yarn. Dean Brown said it was also interesting to note that although drawing sliver from two of the treated cottons were less even than the controls, the roving and yarn produced were more even than the controls. In some runs giving a higher number of ends down, stronger yarn was produced, and likewise in certain cases where the evenness was lower the yarns were somewhat stronger. The study also brought out the fact that greatly different amounts of the frictional agent are required to produce maximum drafting force with different cottons.

(Note: A detailed abstract of the next paper, "Effect of Fabric Structure on Fabric Properties," by John J. Brown of the New Orleans laboratory, is published in this issue; it begins on Page 75).

A preliminary progress report on "The S.R.R.L. Carding Cleaner" was presented next by George J. Kyame of the Southern Regional Research Laboratory, New Orleans, La. Mr. Kyame gave a detailed description of the experimental machine, which was said to be somewhat similar to a down-stroke Buckley-type cleaner, but with the customary beater replaced with a licker-in type carding cylinder. Mr. Kyame also described an improved feed system using a novel type of roll, called an "anti-pluck" roll, which permits rapidly advancing a relatively thin layer of cotton to the carding cylinder while simultaneously resisting the efforts of the carding cylinder to pull the cotton away. This action opens the cotton to such a degree that cleaning efficiencies as high as 60 to 78 per cent in a single machine are feasible at production rates of 400 pounds an hour, Mr. Kyame pointed out.

After building an experimental model of the machine with (1) a perforated, toothed carding cylinder covered with a standard licker-in wire wound so that the wire bridged the perforations along the spiral path; and (2) the "anti-pluck" feed roll, several conclusions were drawn from the various trial runs: (1) a condenser-type carding cylinder

is unsatisfactory for cleaning cotton; (2) to achieve cleaning efficiencies greater than 30 per cent, the grid bar-to-beater teeth clearance had to be 1/16-inch or less; (3) cleaning efficiency increases with increased spacing of the grid bars; (4) decreasing the included angle at the leading edge of the grid bar makes cleaning efficiency less susceptible to the angle of tilt of the grid bar; and (5) cleaning efficiency increases with increasing openness of the stock.

With this knowledge at hand, the machine was rebuilt. The grid bar mounting means were refined to permit more accurate settings of both angle of tilt and clearance. A new carding cylinder, without perforations, was made and clothed with a finer-toothed wire in turns spaced 1/8-inch apart. A drafting feed system was incorporated in the unit so that cotton coming directly from the hopper feeder could be drafted to the relatively lighter density requirements of the cleaner. The drafting system failed, however, so a pre-opening unit to feed the cleaning unit was designed.

Preliminary tests revealed such a high degree of opening of the cotton that the doffer being used was incapable of completely stripping the thin film of fibers on the carding cylinder even though the surface speed ratio of doffer cylinder-to-carding cylinder was increased beyond practical limits. Satisfactory doffing was finally accomplished by installing an air-blast nozzle similar to that used in cotton gins. Other modifications were made as required by results from extensive testing.

Test results, Mr. Kayme pointed out, indicate that the machine shows considerable promise. If these results are confirmed by a production-size machine now being designed, the cleaner will be capable of processing cotton at the rate of 400 pounds an hour while removing about 70 per cent of the trash present, without fiber damage. He stressed the fact that the data presented was based on limited data.

Two papers on "The Fiberbond Process—A New Approach to Twistless Yarns" were presented by Richard D. Wells, Bates Mfg. Co., who spoke on the "Theory and Product," and John W. Powischill, Proctor & Schwartz Inc., who described "Processing Equipment." Mr. Wells, in his paper, pointed out that the idea of staple fiber yarns held together with an adhesive agent instead of twist is not entirely new, the theory having been advanced by Beardsley Lawrence some years ago. However, he said, there has been no major exploitation of a method or product to utilize the principle. He then described the Tek-Ja process used by Bates in processing of cotton, used almost exclusively with temporary adhesives such as polyvinyl alcohol. Tracing the features and characteristics of the process and resulting yarns, Mr. Wells drew these conclusions: (1) the Tek-Ja



Winding up the clinic . . . John J. Brown, George J. Kyame, Richard D. Wells and John W. Powischill.



process is intriguing in concept and opens the way to various products and production systems not previously demonstrated as practical; (2) there seem to be both technical and economic potentials for the process, certainly in specialized and possibly in general fields of application; and (3) as a growing development the process is well through its infancy and approaching a healthy state of adolescence. He said that he expects its maturity to be a significant factor even though, as yet, the exact pattern is not fully predictable.

Describing the processing equipment being built by Proctor & Schwartz to commercially manufacture no-twist yarn, Mr. Powischill noted that while little change has been made in the original ideas concerning the process, considerable changes have been incorporated in the machines to do the processing. To begin with, factors such as the following had to be taken into account: (1) the machinery would have to operate competitively with conventional machines producing conventional types of yarn; manufacturing cost had to be held to a minimum; (2) the machine must be convenient and accessible; (3) the unit had to be economical

from a standpoint of floor space required; and (4) the unit must economically justify its original cost.

The speaker then reviewed the construction features of the machinery developed. Credit was given in large measures to Fiberbond Laboratories Inc., Watertown, Mass., for many of the ideas ultimately decided upon as the final design for the machinery now being built by Proctor & Schwartz under license from Fiberbond. He concluded by saying that his company's main efforts are being devoted to solving various minor problems along with some larger problems which cause excessive down time and reduce the number of ends that an operator will be able to handle. Progress to date indicates that Tek-Ja process yarns can at least be made as economically as conventional yarns.

The Textile Operating Executives of Georgia will hold its annual Spring meeting April 23 at the Hightower Textile Building, Georgia Tech, Atlanta, according to Herman A. Dickert, secretary-treasurer. Discussion at the meeting will be devoted to carding and spinning.

## — How Are Your Communications Down The Line? —

NOT SO LONG AGO, no theoretical science to speak of had entered our trade. In the newer industries science and research were often responsible for the industrial development itself. Synthetics are a typical example of this. In such industries there is no real problem, either technical or psychological, of science being the helmsman directing its course. This all comes natural to them. They've never known anything else. But in the old industry of textile manufacturing there seem to be two people on the bridge now; the schooled engineer—and the old skipper—and the problem is, who is going to be at the helm from now on.

For anybody who is aware of the rocket-like scientific development of our days, there can be little doubt about the answer. Science will have to take over and maybe pretty fast. But in accepting this we have entered into a problem, of which I fear too few people amongst ourselves, are sufficiently aware. We see this problem in different degrees, wherever science has to be the advisor of industry, without being fully integrated and part of that industry itself.

No man, who gets a scientific training, but who through the fact that he needed all his available time for his study, will be able to fully understand the psychological difficulties he has to cope with in introducing his maybe sound ideas. Too often his failure is not due to the fact that his supposition was wrong, but because of his ignorance about the many obstacles and pitfalls he would find on his way.

If only we could create the combination of a man—half scientific engineer, half skipper—we would have the ideal helmsman to steer our industry clear into the scientific waters. But alas, it takes many years to become a well-schooled engineer and almost a lifetime to become a good

skipper and so we shall have to do the best we can trying to use both and still keep on the right course.

In trying to get ideas across from the engineer to the people in charge of the processing and vice-versa, I found that one of the main things we lacked was "visibility of the organization." Apparently without many people realizing this, nearly everything in our textile mills happened anonymously. A stranger walking through a mill would not be able to understand anything regarding the production process from visible information in the mill itself. Why should this be so?

When thinking about this, it occurred to me that the necessity to advertise any plain facts regarding the processing must never have been felt by management. The worker was told what to do and what not to do. Why should he be given any information about matters beyond his direct and personal responsibility?

I do not know how things have been here in the past in this respect, but in our industry in the old days, almost anything happening in a textile mill was considered top-secret. Most of us now have become used to the fact that progress is moving so fast that we cannot afford any longer to sit back and shut ourselves off from the rest of the world and as a result of that, also from outside criticism.

Few people are likely to deny that things have changed, but apart from a mill's policy to supply no visible information on production details in the mill, for competitive reasons, a more practical argument which we may meet in our days is that management does not see a great advantage in showing the works to everybody who cares to look, because this might invite people to concern themselves with matters not belonging to their own duties and thus bring up unnecessary questions or complaints.

And as far as my experience goes, this is actually the situation we will find in the majority of our textile mills. The greater part of the information there is will be hidden in little pocket-books and in the bureau drawers of supervision and the mill staff. But assuming management doesn't think it worth the price to supply visible information, it will have to answer the question what it expects from its labor.

Does it want to draw the interest of the people working in the mill for what's actually going on and by doing so tempt the operators to develop themselves beyond their manual tasks as much as possible, or does it prefer to keep everybody as much in his own place as possible?

On this, every management will have to decide for itself. But from our experience and working under our, possibly typical, circumstances, we came to the conclusion that in order to get people to work efficiently for the mill, instead of only for themselves and possibly at the cost of the mill, we had to make things concerning their work and concerning the inside organization of the mill visible for them, as well as it might be possible for us to do.—



Mr. Blydenstein

Excerpts from an address by William J. Blydenstein of N. V. Katoenspinnerij, Bamschoeve, Enschede, Holland, before last month's Cotton Research Clinic.



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# Warp Preparation & Weaving

## Effect Of Fabric Structure On Fabric Properties

By JOHN J. BROWN and RALPH A. RUSCA, Southern Regional Research Laboratory

United States Department of Agriculture, New Orleans, La.

Research leading to the development of specialized fabrics for an agency of the Department of Defense is described in this paper. Requirements called for the fabrics to be highly resistant to the passage of water and air and to possess relatively high tensile and tear strength, yet to be light in weight.

The effects of seven types of fabric structure on the physical properties of the fabrics are discussed. Of the constructions tested, basket weaves offered an acceptable compromise among the properties desired, with a 2/2 basket being highly water-resistant without any chemical treatment and a 3/3 basket being slightly less water-resistant and slightly more tear-resistant. Regardless of the weave, as the picks per inch were increased, air and water resistance increased and tear strength decreased. Bleaching, mercerizing and dyeing significantly decreased the tightness of the fabrics; however, application of a flame-retardant and water-repellent treatment almost restored the original resistance of the fabrics to the passage of water and air.

Mr. Brown presented the results of his and Mr. Rusca's work at the Cotton Research Clinic in Pinehurst, N. C., Feb. 18.

ALTHOUGH it has long been known that the physical properties of fabrics depend to a large extent on the weave, yarn construction and other structural details, only within the past few decades has emphasis been placed on engineering fabrics for specific end-uses. Perhaps the most widely-known work of this nature was done by Peirce, in which he presented formulas for finding the cover factor and other important constructional details of a fabric. More recently, a report published by the Office of the Quartermaster General, Research and Development Division, included studies of the factors affecting the tear resistance, water resistance, air permeability, strength and other physical properties of fabrics.

The Southern Regional Research Laboratory, at the request of the Bureau of Aeronautics, Department of the Navy, recently undertook the design and construction of a cotton

fabric processing certain physical properties highly desirable in specialized flight clothing. It was required that the fabric be light in weight, and at the same time be highly resistant to water and wind, and possess a relatively high tensile and tear strength. Also, the cotton varieties and yarn numbers to be used in such a fabric must be readily available in time of a national emergency.

The research plan was to weave several fabric constructions from the same yarns and then to determine which construction would satisfy the end use requirements. One important objective of the project was the development of a fabric which would possess the necessary properties without requiring any coating other than the conventional finishing operations. To obtain a highly water and air-resistant fabric, it was necessary to use the S.R.R.L. loom attachment at the weaving process in order that the required number of picks per inch could be put into the cloth.

In designing a high-density fabric where the pickage is increased above the limitation of a regular loom, it is necessary to have sufficient ends per inch in the fabric to hold the width of the fabric as near as possible to that of the spread-in-reed. For the same cover factor, the weight of the fabric determines the ends per inch and the yarn number that are to be used. For a light weight fabric there would be more ends per inch and finer yarns than there would be for a heavier fabric.

A cover fabric of 30 for the warp and 21 for the filling was selected on the basis of laboratory experience with fabrics which showed good weaving performances coupled with excellent water resistance properties. To meet the weight requirement, 80/2 combed cotton yarns were selected for

FABRIC TYPE	THREAD COUNT		WEIGHT	TENSILE TEAR STRENGTH		AIR PERMEABILITY	HYDROSTATIC HEAD
	Warp	Filling		Warp	Filling		
	Per Inch	Per Inch	Gs. Yd.	Lbs.	Lbs.	cu. ft. Per Sq. Ft.	In. of Water
Mock Len	100	100	5.79	✓	4.9	2.76	20.1
6 Harness Diamond Twill	100	104	5.97	4.9	3.9	3.07	26.3
3/3 Steep Twill	100	217	7.09	4.1	4.2	<.512/	57.3
3/3 Basket	191	210	7.70	7.0	7.2	<.612/	59.3
2/2 Regular Twill	189	135	6.57	3.5	3.5	.70	43.1
2/2 Basket	180	165	7.15	3.6	4.0	0	100.3
Oxford	194	121	6.37	5.5	2.0	0	105.7

✓ Tens across filling

2/ Machine not calibrated to read less than .61 ft.<sup>3</sup>/ft.<sup>2</sup>

Table I—Effect of weave at maximum pickage on fabric properties.

both the warp and filling, with 190 ends and 134 picks per inch. The warp was drawn in on 12 harness, straight draw, so that the effect of different weaves could be studied without having to redraw the warp. In Fig. 1 are shown the different weaves of the fabrics woven.

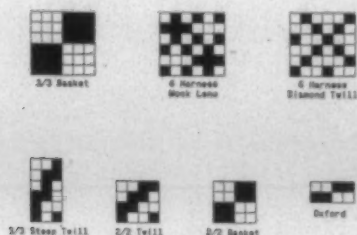


Fig. 1—Designs of weaves investigated.

Table I shows the physical properties of 7 fabric constructions, with maximum pickage for each weave. With the aid of the loom attachment, it was possible to produce a filling cover factor of 34.4 (217 picks) and a total cover factor of 64.1 for the 3/3 steep twill, 33.2 (210 picks) and 63.4 for the 3/3 basket, 26.0 (165 picks) and 55.8 for the 2/2 basket, 21.4 (134 picks) and 51.3 for the 2/2 twill, 19.1 (121 picks) and 49.8 for the oxford, 16.5 (104 picks) and 46.2 for the 6 harness diamond twill and 15.8 (100 picks) and 45.6 for the mock leno. Incidentally, to the best of the authors' knowledge, cover factors in excess of about 52 have not been achieved heretofore.

On the basis of tear strength, air permeability and hydrostatic head, the 3/3 basket and the 2/2 baskets were found to be the best of the seven patterns used. The hydrostatic head of the mock leno and the diamond twill was too low. The oxford showed a very good hydrostatic head and no

passage of air at 1/2 inch pressure; however, the tear in the filling direction was low, as was also found in the 2/2 regular twill. Sufficient yardage of the 3/3 basket with 210 picks and 2/2 basket with 165 picks were woven and furnished to the Navy for in-service testing.

A detailed study was made of the effect of changing the picks per inch on fabric properties of the 3/3 basket, 3/3 steep twill and the 2/2 basket. Picks per inch were varied from 134 to maximum for each weave.

**Effects of Picks Per Inch on Tensile Strength**—Fig. 2 shows the effect of increasing the pickage on warp tensile strength. The warp tensile strength decreases for the 3/3 steep twill and 2/2 basket with increases in picks per inch. This effect may be attributed to abrasive action on the warp during weaving. Although the 3/3 basket at 210 picks did not follow the same pattern, it is believed this is an error. Unfortunately there was insufficient fabric available to allow rechecking the data. Fig. 3 shows the effect on the fabric filling strength of increases in picks per inch. The filling is not subjected to the abrasive action found in the warp and therefore the strength increased as the picks were increased.

**Effect of Picks Per Inch on Tear Strength**—The tear strength for the 3/3 basket was the highest in both the warp and filling (Figs. 4 and 5). As might be anticipated, increasing the picks per inch lowered the tear strength in all three weaves. It is interesting to note that the 3/3 basket with 210 picks per inch had only four tenths of a pound lower tear strength in the warp direction and five tenths of a pound in the filling than the 3/3 steep twill with 138 picks per inch. Compared with the 2/2 basket with 135 picks, the 3/3 basket had .8 pound higher warp tear and 2.3 pounds higher filling tear.

**Effect of Picks Per Inch on Hydrostatic Head**—Fig. 6 depicts the effect of increasing the picks per inch on the hydrostatic head. The 2/2 basket weave with 165 picks per

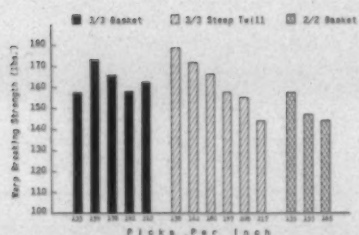


Fig. 2—Effect of picks per inch on warp tensile strength of three weaves.

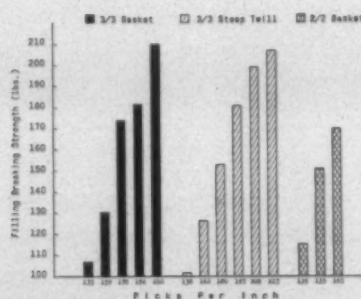


Fig. 3—Effect of picks per inch on filling tensile strength of three weaves.

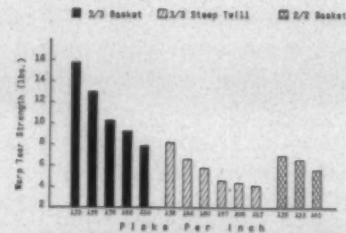


Fig. 4—Effect of picks per inch on warp tear strength of three weaves.

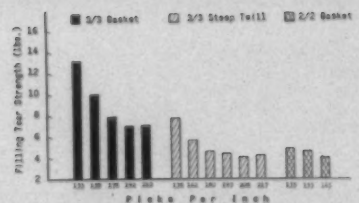


Fig. 5—Effect of picks per inch on filling tear strength of three weaves.

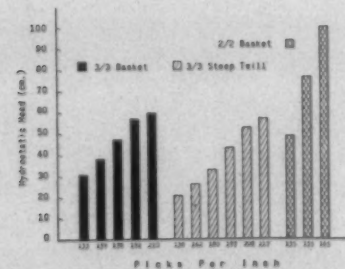


Fig. 6—Effect of picks per inch on hydrostatic head of three weaves.

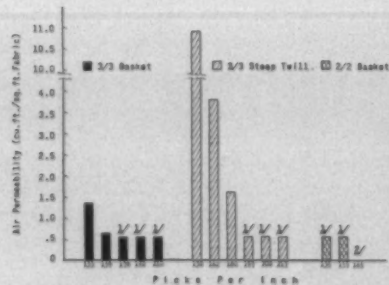


Fig. 7—Effect of picks per inch on air permeability of three weaves.



PROPERTIES	3/3 BASKET		2/2 BASKET	
	Grey	Finished $\sqrt{}$	Grey	Finished $\sqrt{}$
Weight (oz./sq. yd.)	7.7	7.2	7.2	6.4
Strength (lbs.)				
Tensile (1" strip)				
Warp	162.7	172.0	143.9	157.0
Filling	210.6	144.4	170.0	130.0
Tear (Tongue)				
Warp	7.8	9.7	5.6	5.7
Filling	7.2	8.6	4.0	5.0
Air Permeability (Ft. <sup>3</sup> /Min./Ft. <sup>2</sup> )	<.63	5.2	0.0	4.1
Hydrostatic Head (cm.)	53.8	19.8	100.3	21.9

$\sqrt{}$  Desized, scoured, bleached, mercerized, and dyed.

		2/		2/
Air Permeability (Ft. <sup>3</sup> /Min./Ft. <sup>2</sup> )		.8		<.63
Hydrostatic Head (cm.)		49.4		75.2

2/ THPC-Flame-retardant and "Zelan" treatment added.

3/ Machine not calibrated to read less than .61 ft.<sup>3</sup>/ft.<sup>2</sup>

Table II—Effect of finishing on the physical properties of high pickage fabrics.

inch had 85 per cent higher water resistance than either the 3/3 steep twill with 217 picks per inch or the 3/3 basket with 192 picks per inch.

*Effects of Picks Per Inch on Air Permeability*—Fig. 7 shows the amount of air passing through the fabrics with increasing picks per inch. Like the effect on water resistance, the 2/2 basket passed less air at lower picks per inch than either the 3/3 basket or 3/3 steep twill at higher pickages.

*Effect of Finishing on Physical Properties*—After selecting the specific construction of the 3/3 basket and the 2/2 basket fabrics to be furnished for in-service testing, these

fabrics were desized, scoured, bleached, mercerized and dyed. The dyed fabrics were then given a flame-retardant and "Zelan" treatment. Table II shows the effect of finishing through dyeing on the physical properties of the fabrics, and the effect of the flame-retardant and water repellent treatments on the air and water permeability. Although finishing significantly decreased the resistance of the fabrics to the passage of air and water, the subsequent treatments improved these properties so that they were almost equal to the greige goods.

Knowledge of the effect of fabric structure on fabric properties was used as the starting point for developing a specialized cotton fabric required by an agency of the Department of Defense. It was necessary that the fabric be practically water and windproof, yet be light in weight and possess adequate tear strength. Within the weight limitation imposed, it was found that the fabric could be produced from a high sley, high pickage construction with a very high cover factor. The desired warp count was achieved through the use of fine, plied yarns and the filling count through the use of a loom attachment developed several years ago by the Southern Regional Research Laboratory.

Bright yarn should be used in the manufacture of marquissette curtains of Dacron polyester fiber, according to Du Pont's textile fibers department. This opinion was expressed as a result of recent inquiries in the industry regarding acceptable Dacron yarn types in marquissette constructions. Dacron yarn is made in three lusters: bright, semi-dull and dull.

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## Maintenance, Engineering & Handling



# Does It Pay To Brick Up Mill Windows?



By ROY A. PALMER  
Duke Power Co.  
Charlotte, N. C.

Windowless plants are nothing new to the Southern textile industry. As a matter of fact, mills in this area "broke ground" in this respect long before other industries elsewhere. Plants put up in recent years have practically no windows, and old mills have had them bricked up. But do you know why?

SINCE window glass first became practical for use in industrial buildings, windows have been as much a part of the building as the walls themselves. They are a disadvantage whenever ventilating or humidification conditioning systems are employed, however, and many new plants are being designed with windowless construction. A number of older plants are bricking up their windows.

It takes courage to break away from long-standing tradition, but the advantages of eliminating windows are often

Heat losses through the large windows of this plant of Joanna (S. C.) Cotton Mills Co. placed an unnecessary load on the humidification system. To eliminate these losses, management decided to . . .

. . . brick up the windows as a further step in Joanna's modernization program. Better-running work and greater employee comfort has resulted.



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very much worthwhile. Bricking up windows reduces the operating costs of humidification by reducing heat gain during summer cooling and heat loss during winter heating. In addition, temperatures can be maintained more uniformly throughout the plant:

With mechanical ventilation, the filtered air entering the room carries much less dust, dirt, and soot than air entering through windows. The clean air is particularly important where dust causes damage to the products being manufactured. The cleaner air also lessens maintenance costs by reducing the frequency of painting and cleaning and by cutting wear on equipment.

Windows exist for two purposes—to provide light and ventilation. Since ventilation can be better controlled in other ways, we can eliminate the windows with respect to this requirement. An analysis of how effectively windows provide light will show that their usefulness for this purpose also is not as great as we often think it is.

#### Light Meter Readings

Using a light meter, it can be shown that on bright, sunny days, the intensity of the light near the window is relatively high. However, it drops off very rapidly as the distance from the window is increased. Workers performing tasks some distance away from the windows are seriously handicapped in seeing easily, quickly and safely. Early morning and late afternoon shifts derive little benefit from the light coming through the windows. They are of even less value on dark, cloudy days.

Some have argued that daylight from windows cuts the cost of artificial lighting. One has only to check his own plant to find that, in almost every instance, the lighting system is in full operation even when the sun is shining at its brightest. Artificial lighting is necessary because of the low intensity of daylight away from the windows.

Windows often become a source of glare—brightness which hinders rather than helps vision. Shades, venetian blinds, or awnings can be used to control the brightness, but they are seldom properly adjusted to coincide with changes in the intensity of the light as the sun's position changes. Also, they represent a large investment and need considerable maintenance. To avoid these expenses, many plants have painted their windows with translucent paint. This reduces the transmission of light as much as 90 per cent, thus defeating the original purpose of the windows. Is it any wonder, then, that many plants have bricked up the windows in their buildings?

From this analysis, we can readily appreciate that daylight from windows costs money. Each square foot of glass costs more to install than the cost of a square foot of brick. Cleaning of windows plus occasional repairs, as well as shades or awnings, are definite costs. The heat losses due to windows may be a sizeable factor in some plants, and in the Summer the radiant heat from the windows may add to the discomfort and lowered efficiency of the workers.

#### Eliminating Windows

By eliminating windows, the complete interior floor area can be used. The greater uniformity of artificial light and ventilation permits the placement of machines and work centers according to production needs. The unrestricted wall surfaces also permit greater flexibility in locating equipment.

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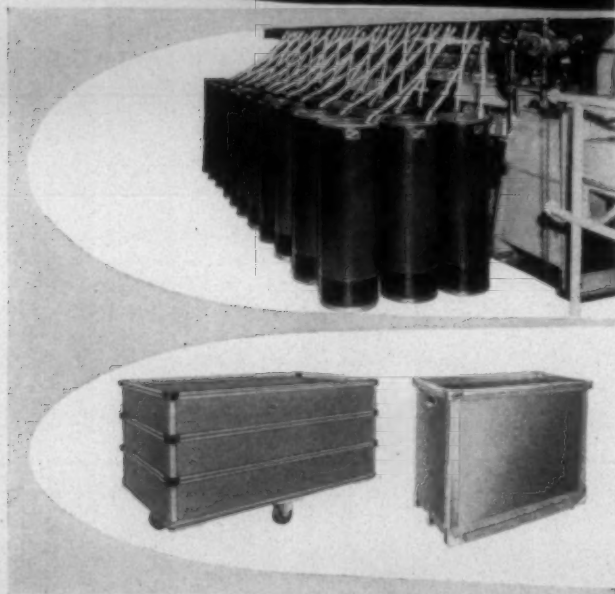
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## MAINTENANCE, ENGINEERING & HANDLING

other items in a windowless plant contributes greatly to speeding production and reducing costs. The production workers also do better work when provided with the clean air, at proper temperature and humidity, and with the improved lighting made possible by eliminating the windows.

One of the main objections raised by some is the fear of claustrophobia in bricked-up buildings. However, that fear is never considered by any of us when we go to a theater. Although we seldom realize it, almost all large retail stores also are windowless.

The windows in a considerable number of industrial buildings either have been bricked up or were eliminated from the design. The successful operation of these plants is evidence that the fear of claustrophobia has not been a problem.

Since engineers have shown daylight costs money, few saw-toothed industrial buildings have been constructed. Mechanical ventilation or air conditioning and low-cost, uniformly distributed illumination have made such buildings impractical, both from the cost and functional viewpoint. Windowless buildings, properly ventilated and lighted, provide cleanliness, comfort and good lighting for one shift or three, as the needs of the mill may dictate.

## Handling Show To Pinpoint Obsolescence

New systems of materials handling to keep up with the growth of automation in the nation's plants will highlight the three-day conference to be presented by the American Material Handling Society in Chicago in May. Materials handling, the science of moving raw materials and finished products with a minimum of human labor, is one of the principal factors in automation. Problems of mills which must continue production in outmoded, multi-story buildings, as well as in those where plant layout is of the latest design, will be considered.

The conference will run during the first three days, May 16-18, of the week of May 16-20 during which the sixth National Materials Handling Exposition will be presented. Both events will take place at the International Amphitheatre. Clapp & Poliak Inc., founder and producer of the exposition, has made a grant to the society to underwrite the expenses of the conference.

The show, one of the largest in the country, will demonstrate all types of materials handling equipment under simulated factory conditions. More than 200 companies will exhibit. The displays will occupy the combined facilities of the old building of the International Amphitheatre and its newly-constructed addition.

Both the conference and the exhibits will be keyed to the theme, "The Concept of Obsolescence." This theme was selected because much of American industry's materials handling equipment is out-moded. Despite the fact that the materials handling science was introduced as a major factor as late as 1947, advances in the field have been so rapid that obsolescence is already a problem. In their efforts to achieve the automatic factory, engineers have developed many new systems and types of equipment for handling.

The society's decision to include the problems of the older plants, in addition to reports of the latest advances, was made in recognition of the fact that many large and small factories are unable to move from their present sites. Consequently, they must use handling equipment especially

designed to meet their needs. However, discussions of the newest advances will not be neglected.

Topics to be discussed cover the wide range of cost reduction; effect of handling on production problems; receiving; warehousing; shipping; containers; palletization; storage patterns; loading and unloading facilities; purchase, leasing, replacement and maintenance policies; analysis of materials handling problems and its relationship to layout and production; water, rail and over-the-road carriers, and yard handling.

### Mill Electrical Change-Overs Cited

Methods for providing uninterrupted electric service to mills during expansion and modernization were outlined at a conference held in Atlanta, Ga., recently by the Textile Subcommittee of the American Institute of Electrical Engineers. The meeting was held in the Hightower Textile Building, Georgia Tech., and was presided over by Victor Sepavich, Crompton & Knowles Loom Works, Worcester, Mass., chairman of the A.I.E.E. subcommittee.

H. B. Greear, General Electric Co., Atlanta, in discussing practical applications of circuit breakers in the textile industry, pointed out that more stress should be placed on the momentary current rating, particularly in dealing with oil circuit breakers. In many applications, circuit breakers must be selected primarily on the basis of their momentary rating. In bringing older mills up to date, he said, it must be considered that many power companies are doubling their generating capacity, thus increasing the short circuit current delivered into the mill of the 600-volt size.

H. Carl Bauman, Chemical Construction Corp., American Cyanamid Co., told the conference that indiscriminant load growth serves to add to the short duty of interruptive devices such as circuit breakers and fuses.

A paper prepared by M. S. Carlson and A. Conangla, I-T-E Circuit Breaker Co., Philadelphia, Pa., emphasized that the application of a current-limiting fuse-low voltage circuit combination is not a simple matter. When a current-limiting fuse is put in series with an air circuit breaker, the available fault current must exceed the interrupting capacity of the breaker to make a feasible application, the meeting was told. Such a combination should eliminate the possibility of one fuse blowing, with the breaker staying closed, and the resulting damage to motors trying to operate single phase.

### Design Engineering Show Postponed

The Design Engineering Show, scheduled to be held in Philadelphia, Pa., in May, has been postponed until late Spring in 1956, according to a recent announcement by Clapp & Poliak Inc. Although two successful shows were held in New York and Chicago under the name of the Basic Materials Exposition, it had been decided to expand the concept of the exposition and the accompanying conference to encompass all aspects of design engineering. However, it was found that not sufficient time was available before the scheduled date of the 1955 show to arrange for the necessary changes required by the new concept.

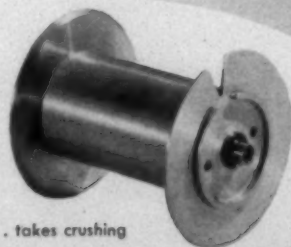
Hanes Dye & Finishing Co. at Winston-Salem, N. C., reports satisfactory use of natural gas heating for steam used on its tenter frames. According to J. Robert Durham, president and treasurer, natural gas is also used in the plant's singeing operations.

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# Bleaching, Dyeing & Finishing

## Notes On Dyeing Tub-Fast Colors

By F. O. STONE—Part Six

This article continues special notes on naphthols which should be helpful to all persons interested in their application. Previous articles in the series (September, November and December 1953, January and February 1954) presented pertinent points of value to technicians as well as non-technically trained dyeing and finishing plant operatives.

**S**UBSTANTIVITY is the yardstick for rating pick-up and retention of naphthol solutions on material in the presence of common salt or on padding operations where the solution strength is considerably stronger than in a straight naphtholation dyeing operation where in turn common salt or Glaubers salt is used at temperatures varying from 100 to 150° F.

For practical purposes, the naphtholates may be put into three classifications: (1) *Non-substantive*—not run in regular dyeing operations where salt is used; chiefly on padding-drying-coupling. (2) *Semi-substantive*—useful for padding and may be used with substantive group for shading purposes, 0.5 to 1 or 1.25 per cent on weight of material; tend to wash off noticeably during cold salt rinse and during cold coupling operation, causing shading off of final coupled shade. (3) *Substantive type*—for use with salt in jig, package, beam and raw stock dyeing operations.

(1) Non-substantive (estimated ten to 14 per cent substantivity) naphthols in common use:

Naphthol AS-Supra	Naphthol AS-PH
Naphthol AS-MX	Naphthol AS-D
Naphthol AS-OL	Naphthol AS-RC

(2) Semi-substantive (estimated 12 to 25 per cent substantivity) naphthols in common use:

Naphthol AS-RL	Naphthol AS-L4G
Naphthol AS-BS	Naphthol AS-G
Naphthol AS-LT	Naphthol AS-TR
Naphthol AS-BG	Naphthol AS-ITR
Naphthol AS-BO	

The last two listed, AS-TR and AS-ITR, sometimes are classed as substantives since they possess fairly good retention under salt rinsing, but due to their lower substantivity and good retention properties may be listed in both Classes 1 and 2.

(3) Substantive (estimated 20 to 50 per cent, or higher, substantivity) naphthols in common use:

Naphthol AS-TR	Naphthol AS-BR
----------------	----------------

Naphthol AS-ITR	Naphthol AS-SR
Naphthol AS-6GL-Supra	Naphthol AS-SG
Naphthol AS-SW-Supra	Naphthol AS-GR
Naphthol AS-LG	Naphthol AS-LB
Naphthol AS-L3G	Naphthol AS-DB

### Fast Color Salts

Usual procedure in the trade is to prepare most of the fast color salts on 20 per cent coupling color yield of a 100 per cent fast color base (diazotized solution). Fast colors in chief use that are prepared on different strengths against 100 per cent fast color base solutions are:

Fast Red 3GB Salt—40%	Fast Scarlet 2G Salt—25%
Fast Blue BB Salt—40%	Fast Scarlet R Salt—25%
Fast Blue RR Salt—40%	Variamine Blue B Salt—50%

Estimated relative color yield value of 100 per cent diazotized color bases against comparable value of fast color salt when coupled on naphtholated cotton goods using one part of Naphthol AS (padding) is given in the following table:

	Salt	Base
Fast Blue BB .....	3.6	1.40
" " B .....	2.80	0.6
" " RR .....	3.3	1.3
" Violet B .....	6.3	1.25
" Variamine Blue B .....	2.7	1.35
" Bordeaux GP .....	4.0	0.80
" Garnet GGBC .....	6.25	1.25
" Red B .....	4.0	0.8
" " RC .....	4.8	0.9
" " RL .....	3.6	0.75
" " 2G .....	3.3	0.65
" " GL .....	3.6	0.75
" " 3GL .....	4.0	1.60
" " TR .....	4.5	0.9
" Poncean L .....	2.6	1.0
Red KB .....	4.5	0.95
" Scarlet G .....	3.5	0.70
" " 2G .....	4.3	1.10
" " R .....	4.2	1.05
" Orange GC .....	4.3	0.85
" Yellow GC .....	4.3	0.85

This chart shows the practical value of assembling precise information as to color yield of various bases, and salts on different type naphtholated goods. Use of this method in seeking best color value applies to all three classes of naphthols.



### Obtaining Maximum Fastness Properties

The value of proper preparation of cotton yarns and piecegoods prior to naphtholation is of vital importance in obtaining uniformity of dyeing operations on naphthols and holding crocking to a minimum. Giving all yarns and piecegoods a partial bleach has been proven to give improved crock and wash fastness, especially crock fastness. This applies to both mercerized and non-mercerized cotton material. Some plants have investigated use of resins in final finish to reduce crocking.

Determine proper control of pH, best suited for naphthol color base color combination used. First obtain recommendations from maker or supplier, then check on small scale with slight variations before applying on plant scale. This pH control will vary according to time element and temperature obtained. On package, beam or raw stock the time period is long whereas on continuous operations you have a matter of seconds or minutes at the most.

Proper preparation of naphthol solutions insures greatest stability for the method of application used. Lack of care on uniform stability is a constant source of shade and fastness variations. A standard method can be adopted after it has been proven in practice to give uniform results on shade and fastness. On naphthol solutions required to stand longer than 30 minutes, excess solvent plus 0.25 to one per cent highly sulfonated castor or castor + oleic acid is useful in maintaining stable solutions. These assistants must be acid-resistant. Further investigations into the use of suitable alkaline-resistant dispersing agents in naphthol solution would prove profitable. There is now a wider range of agents that could be selected from the non-ionic, anionic and some other ones of older manufacturing record could be checked into. The same applies to solvents though the methyl alcohols could be rated as the most economical agents at present.

Control of finishing-off operation is something that has been generally overlooked, since the average plant official assumes that the higher the temperature and stronger the alkalinity, the better clean-up the naphtholated-dyed goods will receive. Finishing plant chemists and dyers are putting on their "thinking caps" and checking into the value of lower temperatures and scouring-off bath, pH of 9½-10 instead of 11-12-13 as commonly used.

The use and selection of newer types of detergents plus dirt redeposition chemicals such as C.M.C. (carbon methyl cellulose), commonly used in soaps and synthetic detergents, are finding practical value.

It has been found that excessively high temperature with strong alkalinity tends to "resolubilize" the naphthol portions of the dyed shade, thus breaking down partially the dyed shade and making it bleed off on wash test or crocking test. With this line of thinking, finishing operations—whether on yarns or piecegoods—are being given a second look as to means to improve their fastness and yet at the same time probably reducing the operating cost from the standpoint of chemicals and steam used. The trend now is to soaping off of piecegoods in rope form instead of open-width. Goods are exposed to a rubbing action plus torsional twisting during open-width scouring.

Dynel, the acrylic fiber, is making headway in the false-hair market (for both humans and dolls). Silk and human hair capped this market before dynel's development.

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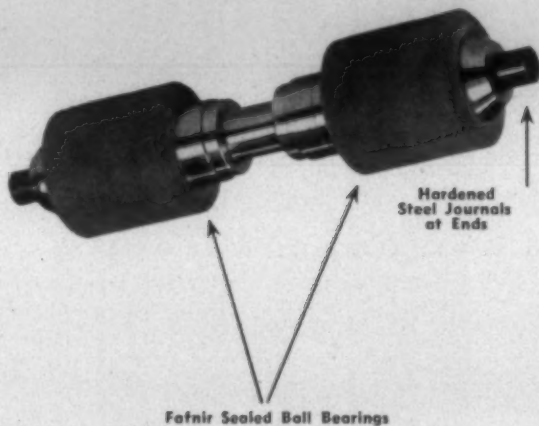


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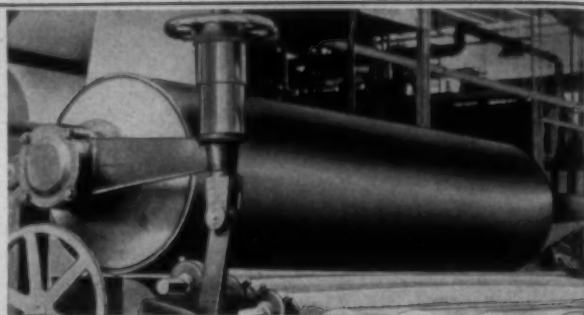
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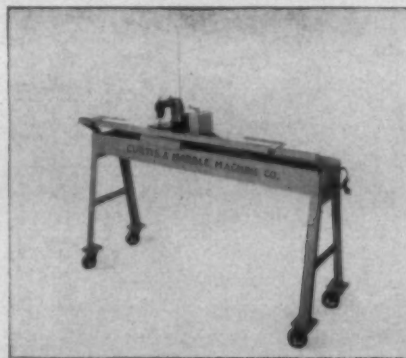
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6. New high speed Head, which features automatic lubrication, low maintenance, and easy operation.

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## PERSONAL NEWS



Carl Chalmers

Carl Chalmers has been promoted to assistant sales manager of the industrial products division of Texize Chemicals Inc., Greenville, S. C. Mr. Chalmers, son of Joe F. Chalmers, general superintendent of Greenwood (S. C.) Mills, has been associated with Texize for the past six years, calling on mills in the two Carolinas. He will make his headquarters in Greenville.

W. Frank Lowell, vice-president in charge of sales for Saco-Lowell Shops, has been named senior vice-president of the company, his duties remaining the same. F. Gorham Brigham Jr., formerly assistant treasurer, has been elected treasurer, a post previously held by Malcolm D. Shaffner, president. Mr. Brigham also continues as secretary. Newly-elected directors to fill vacancies on the board are Jerome Preston, senior partner of Preston, Moss & Co., and Charles F. Hovey, a partner in Herrick, Smith, Donald, Farley and Ketchum.

Harry W. Fehr, president of Steel Heddle Mfg. Co., Philadelphia, Pa., has been named president of Glover-Southern Inc., Greensboro, N. C. Glover-Southern was recently acquired by Steel Heddle. Other officers in the firm are John Kaufmann Sr., chairman of the board; John J. Kaufmann Jr., executive vice-president; Jim Bowen, vice-president; and Arthur Jones, secretary.

L. E. Bowen Jr. has been named superintendent of Tifton (Ga.) Cotton Mills, succeeding Stuart McRae, resigned. . . . J. E. Wilbanks is now overseer of twisting and winding. . . . R. D. McDermid is overseer of carding. . . . L. D. Phillips has been transferred to quality control.

The election of Jerry J. Craig as treasurer of Sun Chemical Corp., effective Feb. 15, has been announced. Mr. Craig has been associated with Sun since 1935, when he joined the accounting department. In 1946 he was placed in charge of all corporate insurance matters and in 1947, he was appointed assistant treasurer. In his new position, Mr. Craig will also be a member of Sun's management committee.

R. E. Sargent of the customers' service department of the textile division of Celanese Corp. of America recently received recognition upon the completion of 25 years of service with the company. K. C.

Loughlin, vice-president and general manager of the textile division, and W. E. Bassett, manager of the customers' service department, presented Mr. Sargent with a service pin and a watch. Mr. Sargent was born in Haverhill, Mass., and is a graduate of Lowell (Mass.) Technological Institute. He started his employment with Tubize Rayon Corp. in 1930 in the New York laboratories. He was transferred to the customers' service department and was stationed in Rome, Ga., and New York City. In 1946, Celanese acquired Tubize Rayon and Mr. Sargent continued with the customers' service department of Celanese. He was transferred to Charlotte in March 1953 when the department was moved from New York to Charlotte, N. C.

E. W. Seigler, vice-president in charge of manufacturing for The Abney Mills, Greenwood, S. C., has been named vice-president of Erwin Mills Inc., Durham, N. C. In this capacity, Mr. Seigler relieves Carl R. Harris, Erwin vice-president and general manager, of his manufacturing duties. Mr. Harris has been given responsibility as vice-president



Carl R. Harris



E. W. Seigler

for the company's personnel and industrial relations activities, from which Frank T. de Vyver will retire June 1 in order to resume his full time duties as professor of economics at Duke University. . . . Marchant C. Cottingham, who served in the headquarter's office as executive assistant in the manufacturing department three years and for the past two years as assistant manager of the company's plants at Erwin, N. C., has been named general manager of Erwin Mills and will be working with Mr. Seigler.

H. D. Carpenter, formerly superintendent of Imperial Cotton Mill, Eatonton, Ga., has been named superintendent of Atlantic Cotton Mills, Macon, Ga., succeeding S. A. McGosh, resigned.

Jack Market, overseer of the carding department, Unity Spinning Plant, USEO Division, Callaway Mills Co., LaGrange, Ga., has been promoted to overseer twisting. He has been with the company since

1939. Clyde Williamson, second hand in the carding department, has been named to succeed Mr. Market as overseer. Mr. Williamson has been with the company since 1941.



Herman S. Boyd Jr.

Herman S. Boyd Jr. of Clinton and Laurens, S. C., has been named a Southern representative of Saco-Lowell Shops, specializing in repair parts only. Mr. Boyd has for the past five years been connected with the Clinton and Lydia Cotton Mills, Clinton, in various capacities. After a period of indoctrination and training, he will make his headquarters in Charlotte, N. C., and call on mills in the area covered by the Charlotte office.

Louis D. Scott has been appointed nylon liaison supervisor for the research and development department of The Chemstrand Corp., Decatur, Ala. Mr. Scott formerly was process development supervisor in yarn technical at the corporation's nylon facilities at Pensacola, Fla. He has been with the company since June 1952.

J. C. Fair Jr. has been appointed sales representative of the new Charlotte, N. C., fiber glass sales branch of the fiber glass division of Pittsburgh Plate Glass Co. Mr. Fair has been supervisor of continuous yarn fabrication at Shelbyville, Ind., where the company opened its first fiber glass plant in 1952. He is a graduate of Clemson College. The new Charlotte office will serve the Southeastern states.

Don O'Hair of Charlotte, N. C., has been appointed sales manager for the Livingstone Coating Corp., Charlotte. Mr. O'Hair will handle the complete line of corrosion-resistant materials and services offered by Livingstone to mills in North Carolina and Virginia.

J. H. Smith has been named superintendent of Washington Mfg. Co., Tennille, Ga., succeeding D. B. Summer.

William E. J. McMann, superintendent of dyeing operations, and H. C. Clark, superintendent of the Riverside division, have resigned their posts at Dan River Mills, Danville, Va. Mr. McMann, who had been with Dan River 23 years, has joined Textile Aniline & Chemical Co. of Lawrence, Mass. He will become manager of a branch office and warehouse the com-



## PERSONAL NEWS

pany is establishing in Danville. Mr. Clark has joined Dominion Textile Ltd., Montreal, Canada. He had been with Dan River 20 years.



**A. Lee Parsons**

A. Lee Parsons, chief clerk of the Committee on Banking and Currency, U. S. Senate, has been named to a staff position with the American Cotton Manufacturers Institute. Mr. Parsons' duties will include administrative assistance in the Washington, D. C., office of the A.C.M.I. A native of Andrews, S. C., he was graduated from Furman University in 1938. He is a director of the Furman Alumni Council. Prior to entering government service, he was engaged in radio broadcasting in the South in a number of different capacities.

Joseph W. Symes has been named second shift superintendent of Goodyear Clearwater Mills, Mill No. 2, Rockmart, Ga., succeeding F. A. Head, who was recently transferred to the company's Mill No. 3 at Atco, Ga., as carding overseer. Mr. Symes, who has been with the company 27 years, comes to Rockmart from the Goodyear mill in Decatur, Ala.

Donald W. Clark, sales manager of Southern Friction Materials Co., Charlotte, N. C., has purchased half interest in the firm and has been elected executive vice-president. Officers re-elected include Howard Snow, president; Fred L. Johnston, vice-president; John O. Camp, secretary; W. W. Dunkin, treasurer; and Homer A. Orren, assistant treasurer.

Robert L. Phillips has resigned his position at Pharr Yarns Inc., McAdenville, N. C., to accept an overseer's position with the Spun Fibers Division, American & Efrid Mills Inc., Whitel, N. C.

Marc V. Shivers, overseer of dyeing at Thomaston (Ga.) Mills, has been promoted to superintendent of dyeing, and Elwood F. Richardson has been named overseer to succeed him. Mr. Shivers, formerly associated with Union Bleachery in Greenville, S. C., has been with Thomaston since 1949. Mr. Richardson had been assistant overseer of the dye department since last October.

Robert S. Brice has been named executive vice-president and general manager of E. E. Smith & Son Inc., Gastonia, N. C., manufacturer of textile machinery repair parts. Mr. Brice was formerly associated with the Draper Corp. and with Dan River Mills, Danville, Va.

Victor H. Josephson, assistant secretary and treasurer of Avondale Mills, Sylacauga, Ala., has resigned after nearly 40 years with the company.

J. Allison Cooper, president of Harriett Cotton Mills and Henderson Cotton Mills, Henderson, N. C., has retired from all official responsibilities with the companies due to poor health. Mr. Cooper has been presi-

dent of both mills since 1941. He was secretary of the mills from 1926 to 1941, and from 1920 to 1926 he was a member of the board and of the finance committee.

John L. Severance was recently elected president of the Arkwright Club, succeeding Louis C. Murphy, Columbus Coated Fabrics Corp. Mr. Severance is also secretary of the Association of Cotton Textile Merchants of New York.

Robert Rigdon Scruggs has been appointed personnel manager at the Granite Plant of Cone Mills Corp. at Haw River, N. C. He was formerly supervisor of the third shift dyeing department at the plant.

Frederick S. Whiteside has resigned as secretary of Pacific Mills after some 25 years with the company. He was elected secretary of the firm last December after having previously held the position of assistant treasurer as well as having been in charge of all purchases.



**John D. Green**

John D. Green, general manager of the P. H. Hanes Knitting Co. spinning plant, Hanes, N. C., has been named vice-president and a director of the company. Mr. Green was manager of the Kershaw, S. C., plant of The Springs Cotton Mills for 11 years before joining Hanes. In 1936 he became superintendent of Santee Mills in Orangeburg and Bamberg, S. C. In 1937 he was named assistant manager of the Lancaster, S. C., plant of Springs, becoming plant manager at Kershaw in 1942. . . . Edwin E. Maddrey, assistant secretary of the company, has been named to the additional duties of assistant treasurer. He has been with the company since 1927.

Walter E. Hildrick has been named president and treasurer of Curtis & Marble Machine Co., Worcester, Mass., succeeding Albert C. Marble, who will be board chairman, a new post. Mr. Hildrick, who joined the firm recently as treasurer, was formerly vice-president of U. S. Finishing Co., Norwich, Conn., and prior to that vice-president of Textron, Inc. . . . Walter F. Woodward, general sales manager, has been promoted to the new post of vice-president in charge of sales.

Charles E. Daniel, chairman of the board of Daniel Construction Co., Greenville, S. C., has been named to receive a Freedom Award from Sertoma Club for his "outstanding contribution to the American way of life by his achievements gained through the free enterprise system." The award will be made March 27 at the Poinsett Hotel, Greenville.

Early A. Feimster Jr., superintendent of finishing, Eagle & Phenix Division, Fairforest Co., Columbus, Ga., has joined Dixie Size & Chemical Co.

Charles F. Schaumann, technical manager of the dye sales division of E. I. du Pont de Nemours & Co. Inc., Wilmington, Del., has resigned after 36 years with the com-

pany. Mr. Schaumann had been technical manager of the dye sales division 23 years.

E. A. Terrell Sr., president of Terrell Machine Co., Charlotte, N. C., is currently on a one-month tour of West Germany with a group of American industrialists, engineers and other technological specialists who have been invited to inspect the West German zone and witness the impressive industrial resurgence that has developed there since World War II.

Robert N. McIver of Richmond, Va., has been named plant operating manager for Fulton Bag & Cotton Mills, Atlanta, Ga. Mr. McIver was formerly associated with the Federal Reserve Bank of Richmond and with Thalheimer Bros., Richmond.

Harry J. Delaney has been named a vice-president of John P. Maguire & Co. Inc., and will make his offices with that firm. Mr. Delaney continues as president of Stevens Financial Corp., a wholly-owned subsidiary of J. P. Stevens & Co. Inc. Stevens acquired control of the Maguire firm last August.

W. A. L. Sibley, vice-president, secretary and treasurer of Monarch Mills, Union, S. C., was recently honored at a dinner meeting of the area scout leaders, Palmetto Council, Boy Scouts of America. Mr. Sibley is immediate past president of the group.

M. M. McCann has been appointed technical representative for Synthron Inc. in Virginia and South Carolina. Before accepting the position, he was with Warwick Chemical Co., a division of Sun Chemical Corp. He succeeds Allen W. Taylor, who resigned to become general manager of Burlington Industries' Altavista, Va., weaving plant.

Gordon A. Gatlin has joined the Pneumafil Corp., Charlotte, N. C., as a service engineer. Mr. Gatlin, a graduate of the N. C. State College School of Textiles, was formerly associated with Highland Park Mfg. Co., Charlotte, and more recently with Patent Scaffolding Co., Charlotte.



**John R. Foster**

John R. Foster, acting president of The McLeod Cos. Inc., Greensboro, N. C., since last May, has been named president. Mr. Foster's position places him in charge of all corporation business which handles operating equipment and maintenance work for textile firms in North and South Carolina, Georgia, Alabama, Tennessee and Virginia. McLeod has two subsidiary companies, Odell Mill Supply Co., Greensboro, and Greenville (S. C.) Textile Supply Co. Other officers of the corporation include Karl A. Fisher, vice-president, Greensboro; C. Q. Mason and Hugh Z. Graham, vice-presidents, Greenville; Dallas Neese, secretary; and T. M. Bailey, treasurer.

Cecil Davenport, superintendent of Bath (S. C.) Mills Inc., a division of United Merchants & Mfrs. Inc., has been named superintendent of Brookford (N. C.) Mills,

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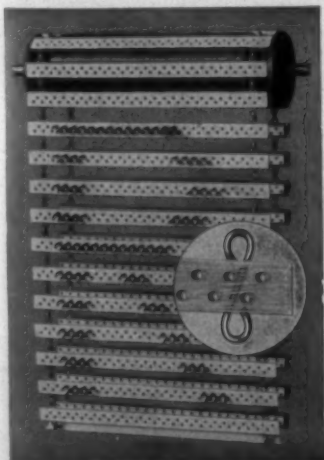
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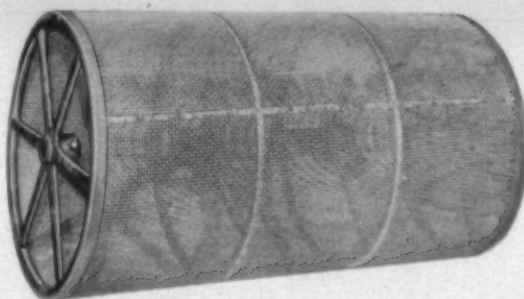
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## PERSONAL NEWS

succeeding A. O. Hefner, resigned. . . . James F. Baker, Seminole Mills, Statesville (N. C.) Division, has been named overseer of spinning, succeeding W. J. Smith, resigned. . . . Harold Hoke, Brookford weave room overseer, has been named technical superintendent. . . . Dan Berini, formerly personnel manager of Seminole at Statesville, has been made personnel manager.

George L. Wrenn, sales manager of the Atlanta, Ga., branch office of Wrenn Bros., Charlotte, N. C., and one of the partners of the firm, has been named to the newly-created position of general sales manager and will maintain his headquarters at Charlotte. Ronald H. Flood has been named to succeed him as sales manager of the Atlanta branch, and Dan Dougherty, office manager of the Greenville, S. C., branch, has been named office manager at Atlanta to succeed Mr. Flood.



Ernest P. Dodge

Ernest P. Dodge has been named Southern manager for Foster Machine Co., Westfield, Mass. Mr. Dodge has been with the company since 1923 and during that time has been employed as service man, service manager for the Charlotte, N. C., area and as Southern salesman. He will continue his headquarters at Charlotte and will be in charge of sales and service in the entire Southern area.

Philip H. Slaughter of Atlanta, Ga., and Charlotte, N. C., has been appointed Southern representative for Walton & Lonsbury, industrial chromium plating, Attleboro, Mass.

Charles A. Cannon, president of Cannon Mills Co., Kannapolis, N. C., was recently honored at a special luncheon at Concord, N. C., for his contributions to Cabarrus County. Mr. Cannon was presented with a bronze plaque engraved, "In appreciation of his exemplary character, judicious counsel in business and civic affairs, devotion to

sound principles of American citizenship, and keen interest in the welfare of the people." The event was sponsored by the civic clubs of Concord.

Dr. John H. Dillon, director of the Textile Research Institute, Princeton, N. J., was presented the Harold De Witt Smith Memorial Medal March 17 at the Hotel Statler, New York City. The medal, a testimonial to the memory of Mr. Smith who pioneered in the concept of an engineering approach to the evaluation of the properties of textile fibers and to their utilization, was awarded Dr. Dillon by Committee D-13 on Textiles, American Society for Testing Materials, for his outstanding accomplishment in the development and application of fundamental knowledge of textile fibers. The medal is endowed by Fabric Research Laboratories Inc., Boston, Mass.

W. Edward Dungan, chief plant engineer at the Roanoke, Va., rayon plant of American Viscose Corp., has been promoted to plant manager. Mr. Dungan has been with the company since 1940, and has been at Roanoke since 1951. Named to succeed him as chief plant engineer is William H. Kreamer, formerly assistant chief plant engineer.

## OBITUARIES

Guy O. Hunter, 67, executive vice-president of The Mary Leila Cotton Mills Inc., Greensboro, Ga., and a director of Echota Cotton Mills, Calhoun, Ga., died recently in High Point, N. C., while on a business trip. Mr. Hunter, who was also director of sales for the Turner Halsey Co., made his headquarters in New York City. Survivors include three daughters and three brothers.

David Jennings, 72, retired director of J. P. Stevens & Co. Inc., died recently at Bronxville, N. Y. Mr. Jennings, a graduate of Clemson College, had been associated with Stevens from 1921 until his retirement Jan. 1, 1949. Prior to 1921 he had been assistant to the president and then vice-president of the Parker Cotton Mills Co., and its successor, Victor-Monaghan Co.,

Greenville, S. C. He was also at one time a member of the firm of Reeves, Jennings Co., textile selling agents. He is survived by his widow, a son, three sisters and a brother.

James Leitch, 77, retired Southern supervisor of erectors for Whitin Machine Works, died recently at his home in Greensboro, N. C. Mr. Leitch, who retired Jan. 1, 1947, had been with Whitin since 1898. With headquarters in Charlotte, N. C., Mr. Leitch installed Whitin machinery, principally spinning frames and twistors, throughout the South.

Robert S. Mebane, 54, former superintendent of the old Great Falls (S.C.) Mfg. Co., died recently at Providence, R. I. He is survived by an aunt.

James Speirs Nicol, 85, a partner in the dextrine manufacturing firm of Morningstar-Nicol Inc., Hawthorne, N. J., died Feb. 16. A native of Scotland, he is survived by several nieces and nephews.

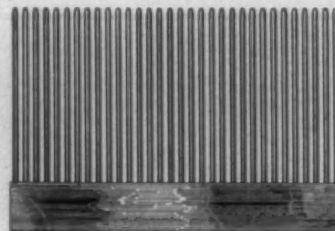
Charles Pinnell, 77, past president of the Textile Color Card Association and of the Textile Converters Association, died recently in Summit, N. J. Mr. Pinnell was also at one time a member of the Board of Arbitration for the textile industry. Surviving are a daughter, a son, a brother, a sister and four grandchildren.

Arthur A. Ridenhour, 40, operator of Arthur A. Ridenhour Textile Machinery & Supplies, Charlotte, N. C., died Feb. 27 at Charlotte. He was the son of J. W. Ridenhour of J. W. Ridenhour Textile Machinery & Supplies, and brother of Hoyte A. Ridenhour, Hoyte A. Ridenhour Machinery & Supply Co., both of Charlotte. In addition to his father and brother, Mr. Ridenhour is survived by his widow, a daughter, a son and three sisters.

Tilden Bert Stevenson, 91, retired mill manager, died Feb. 25 at Charlotte, N. C. He was with Henrietta Mills at Caroleen, N. C., and later with Langley (S. C.) Mills before retiring about 20 years ago. Surviving are his widow, a son and a brother.

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# MILL NEWS

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS. AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

GREENVILLE, S. C.—F. W. Poe Mfg. Co., here, recently purchased a number of looms from the Grosvenor-Dale, Conn., plant of Cluett, Peabody & Co. Inc. The number of looms was not disclosed.

DAVIDSON, N. C.—A new narrow fabric weaving plant representing an investment of \$500,000 will be opened here by G. C. Bovaird Inc. of Stamford, Conn. The plant will manufacture zipper tapes and will be located in the McCanless Mills building. The building is now being converted, and operations are expected to begin about May 1. The plant will employ about 100 persons. Elwood N. Williams of Meadville, Pa., has been named resident manager.

FIELDALE, VA.—An additional Du Pont J-box has been erected in the towel mill bleachery of Fieldcrest Mills Inc., here. Building alterations were also made, including a penthouse to accommodate the height of the J-box. The extra equipment was needed because of increased operations at the towel mill where the weave room now is virtually a three-shift operation. Efficiency of the bleachery will be improved since it will no longer be necessary to run bleached goods through the range twice. In another modernization project, a part of the finishing operations at the finishing mill in Spray, N. C., have been converted to the use of natural gas heating. Equipment is being installed to extend the use of gas to other processes.

SACRAMENTO, CAL.—The California State Department of Corrections recently announced that its new cotton mill at San Quentin Prison will go into operation the latter part of this month. It will be California's first cotton mill and will employ 600 inmates. Cloth produced will be made into finished products at the clothing and sewing factories in San Quentin, California State Prison at Soledad and California Institute for Women at Corona.

PROVIDENCE, R. I.—Stockholders of U. S. Finishing Co. voted recently to sell the company's business and assets to Gera Corp. Approximately 88 per cent of the common stock was voted in favor of the sale and 84 per cent of the preferred. A 75 per cent vote of approval was required. U. S. Finishing owns and operates a plant at Hartsville, S. C.

WALLACE, S. C.—Delta Finishing Co., a division of J. P. Stevens & Co. Inc., has announced plans for adding two new units to the existing plant building. The addition will provide some 55,000 square feet of floor space. Construction is expected to be completed in about 60 days. Daniel Construction Co. of Greenville, S. C., is the general contractor.

RAEFORD, N. C.—Para Thread Co. Inc. of N. C., here, has been sold to the footwear and general products division of U. S. Rubber Co. The Para plant is a single-story

structure with 25,000 square feet of manufacturing and warehouse space. U. S. Rubber will continue the production of rubber covered yarns at the plant, it is said.

LINCOLNTON, N. C.—Summitt Textile Mills, which has been closed for some time, has been sold and will be operated as Bonview Mills Inc. Albert L. Goldsmith, superintendent of Rhodes-Rhyne Mfg. Co., here, will be president and general manager of the plant. Existing machinery has been overhauled, it is said. The plant will employ 15 to 20 employees on a three-shift basis, Mr. Goldsmith reports. T. H. Wilkinson Jr., comptroller of Rhodes-Rhyne, is secretary and treasurer of Bonview. Both he and Mr. Goldsmith will continue in their present capacities at Rhodes-Rhyne, which is expected to buy the production of Bonview.

NEW YORK, N. Y.—J. P. Stevens & Co. has made a cash offer to purchase all the common stock of Cheney Bros., Manchester, Conn. Cheney manufactures silks and synthetic velvets, upholstery and other pile fabrics, glass fabrics, curtain fabrics and yarn. John P. Stevens Jr., chairman of Stevens, said he would expect present Cheney management to continue and plans no change in Cheney operations.

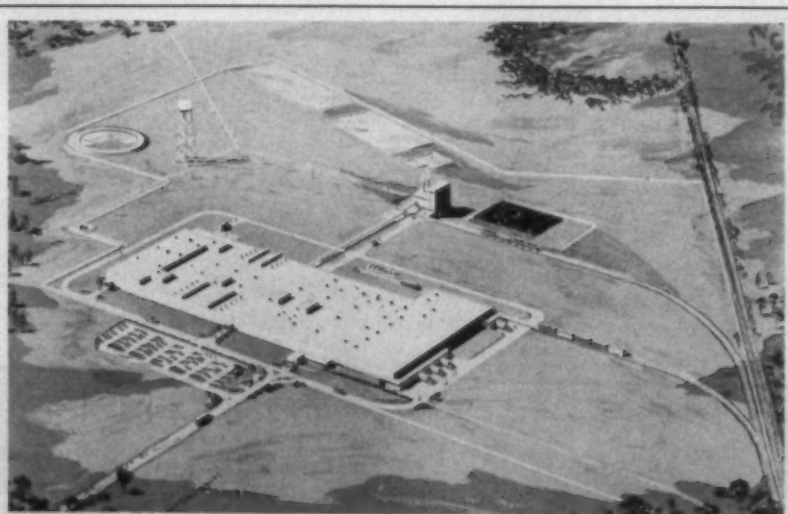
NEW YORK, N. Y.—Leon Lowenstein, board chairman of M. Lowenstein & Sons, announced recently that unless Wamsutta Mills operates on a profitable basis by July or August, it will be moved from its New Bedford, Mass., location or liquidated by

Dec. 31. Mr. Lowenstein said that if the move came about it would be caused by lack of co-operation of labor with management. If the mill is moved from New Bedford, speculation has it that a Southern site will be chosen.

GRANITEVILLE, S. C.—Graniteville Co. has begun construction on a four-story addition to its Hickman Division here. The structure is being added to the south end of the present building and will be 150 by 160 feet in size. This will add 100,000 square feet of operating space and allow 17,000 new spindles and 160 new looms to be installed. Work is scheduled to be finished before the end of the year. Company officials say that the addition will create 200 new jobs.

WHITNEY, S. C.—The merger of Naumkeag Steam Cotton Co., with its operations concentrated at Pequot Mill here, and Indian Head Mills Inc. became effective Feb. 16. The merged mills, a Massachusetts corporation, will operate under the name of Indian Head Mills Inc. R. Carl Dick Jr., vice-president and manager of Pequot, has been elected to a similar capacity in the merged company.

NEW YORK, N. Y.—Stockholders of American Woolen Co. Inc., Textron Inc. and Robbins Mills Inc. have approved the merger of their companies into a new firm to be called Textron American Inc. The merger, proposed some months ago, gives the new corporation combined assets of \$161,000,000.



**KENDALL'S PROPOSED SOUTHERN FINISHING PLANT**—Directors of the Kendall Co. announced last month plans to build a new plant at Bethune, S. C., for operation by its Kendall Mills finishing division and ultimate employment of about 220 persons. While detailed plans are as yet incomplete, it is expected that the plant will be of modern one-story construction, providing some 300,000 square feet of processing and storage space. The engineering work is being done by Lockwood Greene Engineers Inc. of Spartanburg, S. C. Daniel Construction Co. of Greenville, S. C., will begin construction this Spring. The Kendall Mills Division of the Kendall Co., with headquarters at Charlotte, N. C., operates seven plants in the Carolinas.

# S. T. A.

Plans for the Spring divisional meetings of the Southern Textile Association have been announced by the association's divisional chairman. The first meeting of the season will be held by the Eastern Carolina Division April 2 at the N. C. State College School of Textiles, Raleigh. According to A. M. Moore Jr., superintendent of Mill No. 6, Erwin Mills Inc., Durham, and chairman of the division, the program for the meeting will include addresses by William J. Martin, a specialist in the Cotton Utilization Extension of the U. S. Department of Agriculture, who will speak on "This is a New Free Federal Service for Cotton Mills"; Dr. D. J. Moffie, head of the psychology department at N. C. State, "Psychology in Safety"; J. F. Bogdan, director of processing research, N. C. State School of Textiles, "Waste Reduction in Carding"; and Jim Little of Anderson, Clayton & Co., Atlanta, Ga., "Cotton and Its Manufacturing Qualities." Discussion periods on such topics as weaving, supplies, quality control, fixing, waste, cleaning, etc., will be led by J. K. Bruton, superintendent of Mill No. 5, Erwin Mills Inc., Erwin, N. C.; J. B. Hutchinson, Rosemary Mfg. Co., Roanoke Rapids, N. C.; and J. P. Hughes, superintendent of the Eno Plant, Cone Mills Corp., Hillsboro, N. C.

## Northern N. C.-Va. Division

Miles A. Carpenter, assistant superintendent of Mill No. 3, Erwin Mills Inc., Cooleemee, N. C., and chairman of the Northern North Carolina-Virginia Division, has announced that his division will meet April 16 in Spray, N. C., at one of the local high schools. The meeting will begin at 10 a. m., followed by a luncheon at which Spray Cotton Mills will be the host.

## South Carolina Division

The South Carolina Division, headed by W. M. Pittendreich, superintendent of grey mills, Riegel Textile Corp., Ware Shoals, S. C., will hold its meeting on Thursday evening, April 21, beginning at 7 p. m., at Ware Shoals. Carl Brandt, research consultant for Whitin Machine Works, and Elmer J. McVey, vice-president of Saco-Lowell Shops, will appear as speakers. Both will devote their re-

marks to high draft spinning frames. A panel discussion on "High Drafts in the Spinning Room" will follow. Riegel Textile Corp. will act as host for the meeting and a buffet supper will be served.

## Piedmont Division

The Piedmont Division has scheduled its meeting for Saturday, May 7, at the Catawba Country Club, Hickory, N. C., beginning at 10 a. m. James I. Teat of the Southeastern Engineering Co., Charlotte, N. C., will present a paper on "Waste Control Throughout the Mill." The second part of the meeting will consist of a discussion on carding and spinning led by R. M. McCrary, chairman of the division and superintendent of Carolinian Mills Inc., High Shoals, N. C., and a discussion of weaving led by Clarence Willard, vice-chairman of the division and superintendent of the Rhodhiss (N. C.) Division of Pacific Mills. Lunch will be served at the club and the golf course will be made available following the meeting. All four meetings will be open to non-member mill men as well as members.

## Blowing Rock Convention Plans

Officers and members of the board of directors of the Southern Textile Association currently are making detailed plans for the annual convention of the organization, to be held June 16-17-18 this year at Mayview Manor, Blowing Rock, N. C.

During the month of April—some two months prior to the convention—the Southern Textile Association headquarters at Charlotte, N. C., will send out room reservation blanks to all dues-paying members. Blanks for regular (mill executives) members and those for associate (machinery, supply and service firm representatives) members will be mailed at the same time, but the two categories of membership will be sent blanks printed on different-colored paper. Following practice of the past several years, a rooming committee made up of mill men and salesmen will screen all room applications, giving initial priority to textile manufacturing members. After the mill men's room needs have been ascertained, remaining space will be allocated among machinery, supply and service firms who plan to send representatives to Blowing Rock. Convention room demands are expected to exceed the space available at Mayview Manor, thus necessitating the use of Green Park Hotel, which is operated in conjunction with Mayview Manor.

Due to regulations made by the S.T.A. board of governors, no convention room reservations will be honored unless made on the official blanks which are to be sent to all members. The managements of Mayview Manor and Green Park have been instructed not to make any reservations direct.



S.T.A. Divisional Chairmen A. M. Moore (Eastern Carolina), M. A. Carpenter (Northern North Carolina-Virginia), W. M. Pittendreich (South Carolina) and R. M. McCrary (Piedmont).



# A HANDBOOK OF TWISTING

By NEAL TRUSLOW, Superintendent of Product Development, United States Rubber Co., Winnsboro, S. C.

—Chapter Five, Part Two (Effect of Twist on Dimensional Changes)—

WHEN we consider normal shrinkage as opposed to felting shrinkage, we do not find that a high twist reduces the amount of the shrinkage. In fact a high twist will increase the shrinkage. This is a result of the swelling of the fiber when it is exposed to water or some other swelling agent. For the following discussion any shrinkage in length of the fiber is ignored since for some fibers like cotton and linen, it is so small as to be negligible and for other fibers like rayon it can be studied independently. However, the increase in diameter of a cotton fiber can be quite large when it is wet and from the bone dry to the completely wet state an increase in diameter of 20 per cent is frequently encountered. A very compact yarn made of such fibers would increase in diameter a similar amount when it was wet out. However, the outer fibers are wrapped around the yarn so that the swelling tends to lengthen their helical path. If the yarn is unrestrained, the fibers will not be stretched to accomplish this, but rather the yarn will shrink so that the lengths of the fibers are unchanged. The amount of shrinkage that can be accounted for by such a mechanism is shown in the following figures when a cotton yarn goes from 50 to 100 per cent R.H. which accounts for 14 per cent swelling.

Twist Multiple	% Yarn Shrinkage
2.0	0.8
4.0	1.7
6.0	8.9
8.0	25.0

In addition to this effect is the effect on the yarn density. The tightly twisted yarns usually are more compact than the loosely compacted yarns. With repeated swelling and drying, it is possible for them to acquire a more open structure which can have the resultant effect of accenting the above shrinkage. It is therefore seen that twist can affect the shrinkage of yarns by a two-fold mechanism due to the helical path of the fibers and due to the compactness of the yarn.

The above theoretical concepts of twist can have important practical applications. For instance, it is immediately apparent that if a fiber is used which does not swell appreciably with either water or dry cleanings fluids, that this type of shrinkage can be eliminated. Next it can be seen that with low twists that the shrinkage is quite small and therefore when a constant length is wanted it is desirable to use a low twist. This principle was violated a few years ago when a drapery fabric was put on the market in which the warp was made of garnetted rayon. The short staple in this garnetted stock required the yarn to be spun with a high twist and when the drapes were exposed to the normal atmospheric variations in humidity they would change in length as much as nine inches which prevented them from ever giving satisfactory service. Another example of how twist can affect this type of dimensional stability is found in the comparison between worsted and woolen trousers.

In cool rainy weather, it is possible to go from a room where the humidity is about 30 per cent to the street where the trousers are exposed to 100 per cent humidity. Under such changes, the tightly twisted worsted trousers may change in length by more than one inch, but the loosely twisted woolen trousers may change less than a half inch in length.

The twist that is used in a yarn can affect the dimensions of the fabric by causing the fabric to curl or to crepe so that the surface is no longer smooth. Both of these effects are due to the effort made by the yarn to untwist and to thereby relieve some of the torsional strain that exists in the yarn. This might be considered to be a case of how twist affects the thickness of a fabric but it is different from the effects discussed in connection with the meshing of the yarns when they are woven.

Steinburger has demonstrated that the untwisting torque of a yarn is proportional to the number of turns of twist put into it, but that this torque decreases as the yarn is aged or "set" by being conditioned with steam. During the manufacture of cloth from the twisted yarns, the untwisting tendency of the yarns is sufficiently slight to allow the yarns to be properly handled. However, when the goods are wet out, steamed or even exposed to variations in atmospheric humidity, the torque forces are reactivated and the yarn again exhibits its tendency to untwist.

In the fabric form, this slight tendency of each warp yarn to untwist in the clockwise direction, for instance, causes the fabric to curl or wrinkle so the lower right-hand corner and the upper left-hand corner of the fabric turn down while the two opposite corners turn up. Such an action assumes that the tendency of the warp yarns to untwist is not greatly opposed by the tendency of the filling yarns to untwist. The warp and filling tendencies will tend to counteract each other if they are both twisted in the same direction, but will tend to augment each other if they are twisted in opposite directions. Thus, the curl is reduced if both warp and filling are given a "Z" twist, but the curl is increased if the warp is given a "Z" twist while the filling is given an "S" twist.

The tendency of the fabric to curl is dependent on a number of factors such as the type of fiber, the number of threads per inch, the twist and the yarn size. Whitman has derived a relationship for filament yarns of the following form:

$$\frac{EwTw}{Nw^2} = \frac{EfTf}{Nf^2} \quad (16)$$

*w* refers to warp and *f* refers to filling; *E* is the number of threads per inch, *T* is the turns per inch and *N* is the yarn size in an inverse system like the cotton count. In actual practice this formula seems to give rather extreme results and it appears that a more useful form of this



equation is obtained when the yarn size is not squared, or:

$$\frac{E_w T_w}{N_w} = \frac{E_f T_f}{N_f} \quad (17)$$

As a numerical example, suppose we have a broadcloth with a thread count of  $100 \times 60$  woven with a 32s warp and a 40s filling. The warp twist is determined by weaving conditions and will require a 4.75 T.M. In order to produce a completely balanced fabric in regard to curl as calculated by Formula (17), the filling twist multiple would have to be 10.6. However, this is much too high to be practical. Another method of balancing the twists would be to use a balanced two-ply yarn in both warp and filling. The practical advantage of this concept can be seen to be small when applied to a broadcloth shirting as in the above example since the shirting produced from the singles yarn will not wrinkle in use or exhibit appreciably more curl than the fabric made from the two-ply yarns, although the latter may be slightly easier to iron.

When we come to consider more highly-twisted structures such as crepe fabrics, bandages and belt fabrics, the effect is much more noticeable and objectionable if the twists are not balanced and in those cases it is desirable to calculate the necessary twists.

With crepe fabrics, the twists are usually balanced in both the warp and the filling by some technique such as making both the warp and filling two threads of "Z" twist and then two threads of "S" twist. However, some crepe fabrics have the tightly twisted and balanced yarns only in the warp. An example of this is the elephant crepe in which eight ends of "Z" twist are alternated with eight ends of "S" twist. In this case, in order to achieve balance the filling must be either a two-ply balanced yarn or more commonly a very low-twist filament yarn. These crepe fabrics obtain their puckered surface from the tendency of the component yarns to untwist in opposite direction. This tendency is partly activated by the high shrinkage of the yarns and the fabric. However, in order to secure uniform results it is necessary that the twisted yarns be "set" or steamed before weaving in a uniform manner and the "boil-off" of the fabric must be such that the yarns are all exposed uniformly.

With certain fabrics which are given a starched or chemical finish such as cotton fabrics treated with urea formaldehyde resins, it is noticed that the treated fabrics tend to curl in a direction that increases rather than decreases the twist in the yarns. This is because when the yarns were in a swollen condition, their twist was set by time, temperature or tension and then they were locked in that condition by the resin. At a later time when the moisture which had

caused the fibers to swell has been dried out, the fibers are left in a state of compression. The easiest way for them to overcome this is by twisting tighter. In some stiffened fabrics like this it is possible to cause the cloth to curl in one direction by increasing the moisture content (which puts the fibers under tension so they want to untwist) and then to cause the fabric to curl in the opposite direction by drying it out (which puts the fibers under compression so they want to twist tighter).

The twist in the yarn can affect knitted fabrics as well as woven fabrics. When a yarn that has a high twist is knitted into a fabric, it can cause a serious deformation of the knitted structure so that the wales are distorted into a curved line and the opposite corners of the fabric tend to curl up in a manner like that described for woven goods. In addition to this effect, with the jersey stitch the yarns are given a slight twist as it bends into the loop and then this twist is reversed as the yarn comes out of the loop. However, in the jersey structure, both of these twists act so as to curl the fabric in the same direction. This effect can be seen with zero twist filament yarns as well as with spun yarns. Using alternate courses of "Z" and "S" twist yarns will not help the problem but only serves to cause the knit goods to curl in the opposite direction. This effect is not found in rib knit fabrics.

When a yarn or a fabric is loaded or stressed it will become strained and will deform to an extent that is dependent on a number of different variables such as the type of material, the rate of loading and the temperature.

Because of these many variables, it is necessary to specify the exact conditions of loading in order to give meaning to any data on deformation. One of the most commonly used conditions is to expose the samples to a standard atmosphere, and with a rate of elongation of 12 inches per minute, the per cent elongation is measured at the breaking load. Under these conditions the classical theory for an "ideal" yarn indicates that the per cent elongation will not be affected by twist. This theory is based on the reasoning that the central or "core" fibers are not twisted and that they will therefore fail at the same elongation regardless of the twist in the rest of the strand and that when these central fibers fail, the rest of the strand will likewise fail. Actual tests on commercially-produced yarns indicate that this type of behavior is seldom found in

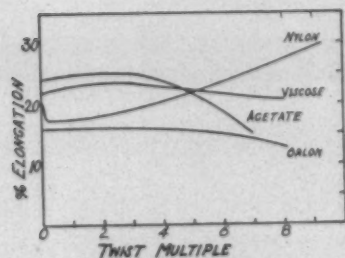


Fig. 5-3—These curves indicate how the elongation at break varied with singles twist for different filament yarns.

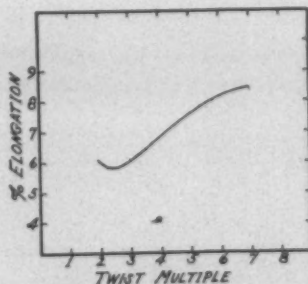


Fig. 5-4—The elongation at break for a single cotton yarn is affected by twist.

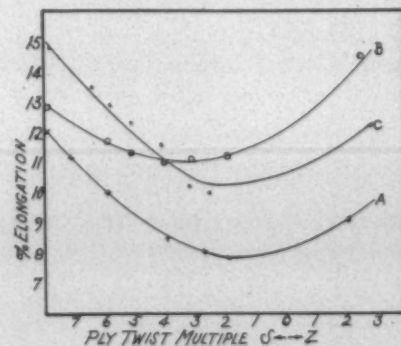


Fig. 5-5—The elongation at break for plied yarns is affected by both the singles as well as the ply twist. In these curves, "A" and "B" are 16/2 cotton with a singles twist multiple of 4.0 "Z" and 7.0 "Z," respectively, while "C" is a 1,650-denier two-ply filament rayon with a 6.3 "Z" single twist multiple.

practice. The variation in elongation at break as the twist is changed for several different types of filament yarns is shown in Fig. 5-3. It can be seen that the change is not large but it is definite. There is no particular trend to this change in elongation at break as the twist is changed and it seems to be dependent to a large degree on the type of material that is being twisted.

In these tests on filament, it was found that nylon and Dacron had an increase in the elongation at break as the twist was increased. For viscose and acetate rayon, it was found that the elongation at break first increased slightly and then decreased. Orlon filament remained fairly constant but the elongation at break fell off at high twists. The conditions of testing and particularly the tension during twisting undoubtedly have a large effect on this elongation at break so that these exact results would not necessarily be obtained with other test conditions.

As the twist in a yarn is changed, there is also a change in the amount of force required to cause a given elongation. In other words, the modulus of elasticity is changed as the twist is increased. From theoretical considerations, we would expect that as the twist for filament yarns is increased that the modulus would be lowered and the material would be easier to stretch. This reasoning comes from the fact that when a twisted yarn is stretched, the central fibers can resist stretching in the same manner as before twisting, but the outer fibers are inclined so that a smaller force is required to cause a given stretch. Put another way, for the outer fibers which are twisted, the fiber strain will be less than the yarn strain. Experimental results have confirmed this hypothesis, but the effect is often of small magnitude until the yarn has been given a high twist (T.M. = 6.0 or above) which is comparable to that used in crepe yarns.

Another method in which twist can affect the elongation characteristic of a yarn is in its elastic recovery. For test purposes, this elastic recovery can be defined as the per cent of stretch recovered in the yarn when it is stressed to 85 per cent of its breaking load. It has been demonstrated that the change is small in elastic recovery under such conditions. However, it appears that the twisting tends to reduce the elastic recovery and that this is proportional to the twist multiple. This effect is carried over into conventional yarns and fabrics, where it would have the tendency of causing fabrics woven of tightly-twisted yarns to take a permanent set more easily than fabrics woven of loosely-twisted yarns. The effect is seen to have practical application when it is noted that worsted trousers which have a tight twist will take and hold a good crease (or permanent set) much more easily than will loosely-twisted woolen trousers.

When we come to consider the effect that twist has on the elongation of spun yarns, we must take into consideration additional factors. Two of the most important of these factors are the air spaces between fibers and the short length of the fiber. The air spaces play a part in the elongation because at low twists these air spaces are quite large and when the yarn is stressed, the fibers are compacted to produce a sizeable elongation for the yarn without greatly straining the fibers. However, as the twist is increased the air spaces are reduced so that this effect is not as noticeable. The net effect of this action is that as the twist is increased from low to medium twists, the stretch of the yarn is normally reduced. Naturally it is possible to select certain

conditions such as wet spinning so as to produce a compact yarn even with very low twists and then this action becomes of small importance. Also, it will be readily appreciated that with long, smooth fibers like linen that the effect will be much less noticeable than with shorter, crimped fibers like wool.

The length of the fibers in a spun yarn has an effect on how the elongation at break varies with twist because at low twists the fibers will pull apart before they rupture. However, as the twist is increased, there is an increase in the number of fibers that are ruptured when the yarn is ruptured. The net effect of this action is to cause an increase in the elongation at break as the twist is increased and this effect becomes appreciable at the medium twists. Thus it is seen that these two effects tend to cancel each other. However, some tests have been run in which both of these effects can be detected. Fig. 5-4 shows the results obtained on some 16s cotton yarns. This figure shows a slight loss in stretch as the twist multiple increases from 2 to 3 after which there is a marked increase in the stretch of the yarn until a twist multiple of 6 is reached after which the stretch appears to level off. It is to be noted, however, that at these high levels of twist where the twist is above 6, that the yarn usually has a marked tendency to kink and form small loops and coils in the yarn. If this action is allowed to proceed to any appreciable extent such as the relaxation encountered in a crepe fabric, the apparent elongation of the yarn can be quite high as these loops are pulled out. Values of up to 30 per cent elongation at break have been recorded for singles cotton yarns with a twist multiple of 9.0 and this high value is believed to be due to the straightening of the small kinks and coils in the yarn.

In regard to the effect of twist on the modulus of elasticity of yarns it is found that as the twist is increased from low to medium values that there is a slight increase in the initial modulus. Here again this is believed due to the effect that twist has on the air spaces between fibers in spun yarns. At the higher twists the same effects are found in spun yarns as were found for filament yarns, i.e., the higher the twist the lower the modulus and the more easily the yarn is stretched.

It has also been found that the spun yarns react to twist in much the same manner that filament yarns react insofar as the effect of elasticity is concerned. Although insufficient experimental data is available to accurately predict the extent of the effect, it appears that high twist in singles yarns tends to reduce the elasticity of the yarns so that they do not recover from strain as readily as do low twist yarns.

When plied yarns are examined it appears that both filament and staple materials behave in the same qualitative manner in regard to elongation, modulus of elasticity and recovery from strain. In regard to the elongation at rupture, it appears that as the ply twist is increased the elongation is increased. Also with any given ply twist, the higher singles twist yarn produces a ply yarn with a higher total elongation. Fig. 5-5 shows how the stretch at break varies with ply twist for three different yarns. Sample A is a 16/2 cotton with a 4.0 "Z" single T.M. Sample B is a 16/2 cotton with a 7.0 "Z" single T.M. Sample C is a two-ply filament yarn made from a 1,650-denier rayon with a 6.3 "Z" single T.M. It should be noted in these curves that when these yarns were twisted only a small amount



in a direction opposite to that of the singles yarn there is a slight decrease in the elongation at break.

In regard to the modulus of elasticity it appears that as the ply twist is increased the yarns are more easily stretched at any given load.

Very few studies have been made on the degree of elasticity or recovery from tensile loads on plied yarn. With moderate ply twists, there may be a slight improvement in elasticity when compared to low ply twists particularly when tightly twisted singles have been used. With hard ply twists there seems to be a reduction in the elasticity of the plied yarns. With compressive deformation of plied yarns such as is encountered in tire cord, belts running over pulleys and in some apparel fabric, even less is known concerning the effect of twist on elasticity. However, in this case, it is believed that high twists in both the single and the ply produce the most elastic product.

### Acetate, Rayon Shipments Show Strength

February shipments of rayon and acetate yarn and staple fiber totaled 102,200,000 pounds, a figure almost identical with January but 26½ per cent more than was shipped in February of 1954, according to the *Textile Organon*, statistical bulletin of the Textile Economics Bureau Inc. Shipments last month consisted of 101,100,000 pounds to domestic consumers and 1,100,000 pounds for export. Shipments in the first two months of 1955 totaled 204,700,000 pounds, 26 per cent more than shipments in the corresponding period last year.

High-tenacity yarn shipments in February amounted to 32,400,000 pounds. With production less than shipments, stock of high-tenacity yarn declined to 8,100,000 pounds over the month. Shipments of rayon regular+intermediate tenacity yarn amounted to 18,400,000 pounds last month and stock declined to 21,100,000 pounds. Acetate yarn shipments totaled 18,200,000 pounds and producers' stocks fell slightly to 21,200,000 pounds.

February shipments of rayon staple+tow were 27,300,000 pounds, nine per cent less than in January, but stocks declined to 16,100,000 pounds. Acetate staple+tow shipments last month amounted to 5,900,000 pounds compared with 5,700,000 pounds in January and in this category producers' stocks also declined.

During 1954, the United States was a net exporter of man-made filament yarn, the *Organon* points out, but was a substantial net importer of man-made staple. For filament yarn, the 1954 export balance was 11,371,000 pounds in favor of this country; this compares with 12,972,000 pounds in 1953. However, 1954 imports of rayon and acetate exceeded exports of those products by 50,988,000 pounds; the import balance in 1953 was 63,563,000 pounds. From these figures, it can be seen that the rayon and acetate staple import balances far outweighed the non-cellulosic staple export balances which amounted to 959,000 pounds in 1953 compared with 2,049,000 pounds in 1954.

The rayon and acetate producing industry in the United States last year consumed 537,800 short tons of cellulose, or 8½ per cent less than was consumed in 1953 and 12½ per cent under consumption in the record year of 1951. Last year 477,300 tons or 89 per cent of the cellulose consumed by producers was wood pulp; in 1953 the wood pulp percentage was 88½ per cent. The 1954 balance of

the total or 60,500 tons was refined cotton linters pulp, the smallest tonnage used since 1943.

Analyzing pulp consumption by process, the *Organon* reveals that viscose+cupra rayon (including waste) during 1954 used up 447,800 tons of cellulose. Of this, 400,300 tons or 89½ per cent was wood pulp and the balance of 47,500 tons was linters pulp. During the year, an average of 1.055 pounds of cellulose was consumed in the production of one pound of rayon yarn, staple and tow, including normal waste.

Acetate production last year consumed 90,000 tons of cellulose, of which 77,100 tons or 85½ per cent was wood pulp and 12,900 tons were linters pulp. An average of 0.679 pounds of cellulose was consumed last year for each pound of acetate. The *Organon* notes that the much lower ratio of cellulose to finished product for acetate reflects the fact that only about two-thirds of the acetate pounds is cellulose and the balance is the acetyl radical.

Compilation of fiber consumption by the *Organon* reveals that in 1954 a total of 6,018,600,000 pounds of cotton, wool, man-made fibers and silk were consumed. This was an eight per cent drop from 1953 and the poorest year for fiber consumption since 1949 when 5,440,000,000 pounds were consumed by mills in the United States. Consumption of all fibers except silk and the non-cellulosic man-made fibers declined compared with 1953.

Cotton, used to the extent of 4,124,000,000 pounds, showed a loss of nine per cent compared to 1953, while rayon+acetate consumption at 1,154,500,000 pounds was down 5½ per cent. For both cotton and rayon+acetate, 1954 was the poorest year since 1949. Wool registered the largest decline, however, with 1954 consumption at 391,600,000 pounds or 22½ per cent under that of the previous year and 47 per cent under the all-time record consumption of 737,500,000 pounds in 1946. Wool consumption last year was smaller than in any year since 1938.

The non-cellulosic man-made fibers continued in an upward consumption trend which has been under way virtually since their inception. A total of 342,100,000 pounds were consumed in 1954, a gain of 14½ per cent over 1953. Silk consumption, which had dropped off to 5,400,000 pounds in 1953, recovered to 6,400,000 pounds in 1954; silk, nevertheless, remains a nominal part of the total supply of textile fibers.

In the last 35 years, according to the *Organon*, the cotton and wool shares of the total fibers consumed have declined and silk has almost disappeared as a factor. The man-made fibers, on the other hand, have grown from nominal useage until they now represent one-quarter of all fibers consumed in the country.

The *Organon* points out the important fact, however, that consumption of all fibers except silk has risen dramatically during the last 35 years. It should be clear that the competition between the various fibers in specific end-uses has not, on net balance, resulted in any large scale over-all replacement of one fiber by another and the outstanding feature of the long-term trend is the expanding consumption of all fibers in the United States with the exception of silk.

Increase in competition between the various fibers for specific end-use markets, the *Organon* notes, has in some cases resulted in displacement of one fiber by another as in the use of rayon instead of cotton for tire cord, and the



replacement of silk by rayon and acetate, and more recently by nylon. There must be taken into consideration also the fact that since 1920-1929 there has been a 42 per cent increase in population. On balance, the net result is a larger market for all textile fibers. Individual fibers, according to the *Organon*, have shared in the growth in proportion to the degree to which they can be adapted to the requirements of the many end-uses to which they are placed.

In another measure of fiber consumption, the *Organon* has computed poundages on the basis of processing losses, sheerness or fineness of woven or knitted fabric and the wear-life or durability of the fabric in use. Under this concept, which the *Organon* has named "utility poundage," the man-made fibers in 1954 accounted for 30½ per cent of all fibers used compared with 28 per cent in 1953. Without the "utility poundage" adjustment, the man-made fiber share of total fibers consumed was 25 per cent—last year compared with 23 per cent in 1953. Civilian per capita fiber consumption in the United States during 1954 totaled 32.6 pounds, according to the *Organon*. This figure consisted of 21.8 pounds of cotton, 8.2 pounds of man-made fibers and 2.6 pounds of wool. The 1954 total represents a ten per cent decline from 1953 and is 6½ per cent below the 1952 figure of 34.9 pounds.

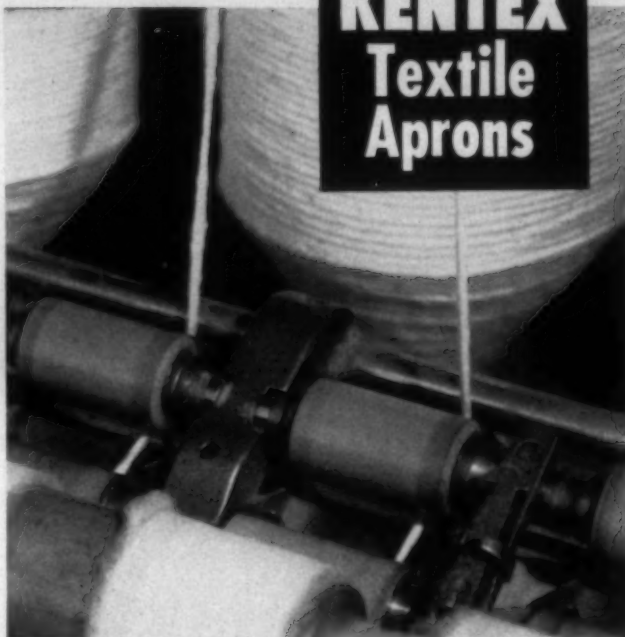
A comparison with 1953 indicates that per capita consumption last year was down for all fibers, with the largest percentage decline in wool. With total fiber consumption down ten per cent compared to the previous year, the respective fibers showed the following losses: cotton ten per cent, man-made fibers 4½ per cent and wool a striking 23½ per cent.

### First Commercial Nuclear Reactor Planned

American Machine & Foundry Co. has completed plans for the building of the first nuclear reactor to be owned and operated by private industry for research in industrial and humanitarian fields, it was announced recently by Gen. Walter Bedell Smith, vice-chairman of the firm's board of directors. A number of leading industrial concerns have been invited to participate in the program on a co-operative basis. Meetings to implement the program are now in progress. In addition to building the reactor, A.M.F. will be one of the participants in the program. Each company will be represented on a board of directors which will establish policy for the operation of the reactor facility. Participating companies will be from the textile, electronics, chemical, rubber, machinery and other industries. The first reactor and its supporting laboratory facilities will cost between \$1,000,000 and \$1,500,000 and can be constructed and available for use within 18 months. It is planned that the facility will be built in the New York area on a site of approximately 250 acres.

General Smith said that nuclear research efforts have already demonstrated the great opportunity for the application of atomic energy to industrial use. "We strongly believe," he said, "that many yet unknown benefits of atomic energy to mankind will be brought to light more quickly through the use of such a facility by industry for private research. Our program should provide the means and stimulus needed to develop peaceful use of the atom on a broad scale. We envision the development of many new and important commercial products and the improvement and extension of a great number of industrial processes. We feel the time has come when American industry should draw on the great

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potential of this new energy source for peaceful use and the betterment of human life. We hope that our program will be a step in that direction." He pointed out that, under the new Atomic Energy Act, the program will require licensing by the Atomic Energy Commission

Research reactors are essentially producers of radiation—neutrons, gamma, beta and other radiations which are emitted from the inner structure of the atom. Through the effective use of these radiations on commercial products and processes the reactor becomes an important tool in industrial research and development. The reactor proposed for the industrial research facility will be of a design already proven by operating experience and will have the anticipated flexibility required to conduct a wide variety of work. It will be a solid-fuel type employing a core similar to that in the materials testing reactor at the national reactor testing station in Idaho. This type research system is the only one which has successfully operated at the high flux levels required for industrial development work. The design concept of the A.M.F.-built reactor would be one of "unitization." This concept permits the standardization of certain components resulting in ease of construction and prevents early obsolescence. The industrial reactor research facility will make possible a variety of research investigations. The outstanding advantage of nuclear reactors as a research device is their capacity to handle relatively large volumes of experimental work, their ease of operation and overall flexibility.

### Survey Shows Cotton's Popularity Growing

Government polls show that cotton is increasing in popularity as the favorite fiber of American women, the National Cotton Council reports. The survey shows that: (1) American women, by overwhelming majorities, prefer to wear cotton; (2) the preference for cotton has shown sharp increases over the past eight years; and (3) easy washing is the principal reason for cotton's popularity.

Titled "Women's Opinions of Fibers in Selected Items of Clothing," the survey is based on interviews last year with 2,281 women, representing a cross section of all home-

makers and all other women in the U. S. between 18 and 65 years old. Women choose cotton as their favorite fiber by ratios up to 94 to 1 over other fibers, the survey showed.

Of the women who wear readymade clothes, 94 per cent said they preferred cotton for housedresses, as compared to only one per cent for the next ranking fiber. This represented a considerable increase in the popularity of cotton housedresses since a similar Agriculture Department survey was made in 1946. At that time only 86 per cent of the women questioned said they preferred cotton.

The current survey showed cotton is the overwhelming favorite for nine different items of clothing—housedresses (preferred by 94 per cent), Summer street dresses (48 per cent), Summer skirts (77 per cent), short-sleeved blouses (50 per cent), sleeveless blouses (82 per cent), shorts (89 per cent), Summer slacks (73 per cent), anklets (73 per cent) and aprons (81 per cent).

Homemakers' preference for cotton increased in all five of the categories which were covered in both surveys. Cotton's percentage in housedresses increased from 86 per cent in 1946 to 94 per cent in 1954; in Summer street dresses from 28 per cent to 48 per cent over the same period; in short-sleeved blouses from 23 to 50 per cent; in anklets from 71 to 73 per cent; and in aprons from 80 to 81 per cent.

The preliminary report noted a growing consumer acceptance of all-season cottons, a group of dark cotton dresses and suits originally introduced about 1951 as "transitional" styles for Fall and Winter. "Women who said they used readymade one-piece Winter street dresses were asked if they had bought any dark cotton dresses for Fall, Spring or Winter wear," the report stated. "A third said they had bought dark cottons in the last year or so, and spoke primarily of good color, style and versatility for multi-seasonal use."

Good laundering qualities, which includes easy washing and good appearance after ironing, was the primary reason given by large majorities of the women for choosing cotton as their favorite fiber. This was the most frequent response, by percentages ranging from 61 per cent for anklets to 91 per cent for housedresses. Right weight, good wearing qualities and good appearance and style were other frequent re-



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sponses. By various majorities, women said cotton offered better styling than other fibers in Summer street dresses (51 per cent said cottons are sold in better styles), short-sleeved blouses (34 per cent voted for cotton as against 24 per cent for the next ranking fiber), sleeveless blouses (61 per cent), long-sleeved blouses (34 per cent). Cotton's position of leadership in the home sewing field likewise was re-affirmed by the survey. Among women who sew at home, there was a nine to one preference for cotton in housedresses and aprons. For Summer skirts cotton was a four to one choice.

### Hamburger Is A.S.T.M. Marburg Lecturer

A wide range of subjects relating to research and testing of engineering materials will be discussed at the 58th annual meeting of the American Society for Testing Materials to be held at Chalfonte-Haddon Hall, Atlantic City, N. J., June 26-July 1. A total of 30 sessions are now scheduled beginning on Monday morning and continuing until Friday noon. On each year's program is the Edgar Marburg Lecture, which this year will be given by Dr. Walter J. Hamburger, director, Fabric Research Laboratory Inc., Boston, Mass., on the subject of textile fibers.

Important in the society's activities are the large number of technical committee meetings which are scheduled. Forty-five committees and their sub-committees will hold a total of about 450 meetings. On Wednesday evening, June 29, the annual dinner will provide a "break" in a week otherwise devoted to intensive technical activity. Entertainment will include a floor show and dancing.

### Extension Cotton Utilization Program

For many years the Extension Service of the United States States Department of Agriculture has conducted educational work on cotton improvement in co-operation with producers, ginners, trade organizations and other state and federal agencies. In this program, major emphasis has been placed on improved varieties, multiplication and distribution of better planting seed, better harvesting methods, improved ginning practices, producers' use of grade and staple services, market news and outlook and improving local marketing practices.

The growing importance of cotton utilization has pointed up the need for more educational work in this field. The federal and state extension services have been authorized to develop such a program in co-operation with the cotton industry and state and federal agencies.

The objective of educational work on cotton utilization is broad, but it is obviously necessary that the program be aimed at the more important problems on a concentrated basis rather than scattered over the whole processing industry. The purpose of undertaking extension work in this field is to help acquaint the cotton textile industry on a timely basis with the results of new research which can contribute to more effective and expanded utilization of cotton. The research results used in this program will come largely from the Southern Utilization Research Laboratory of the Department of Agriculture at New Orleans, La., the state textile schools and cotton improvement agencies.

The Southern Utilization Research Laboratory was established to further the utilization of Southern agricultural products. Over one-half of its budget and research programs are directed toward the utilization of cotton. The work of

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the laboratory includes both mechanical and chemical processing of cotton, and fundamental research on the structure and properties of cotton fibers. Mechanical processing involves work on opening, carding, spinning and weaving cotton, development of new and improved equipment for processing, and the design of fabrics for specific uses. Included also are studies of the relationships between fiber properties, yarn and fabric qualities, and processing performance. One of the most important parts of such a program is getting the research results into the hands of those who can apply and make practical use of them.

Many research findings of practical value are currently available and the services of William J. Martin, recently appointed to the position of extension utilization specialist, will materially help the industry in putting them to use. State and federal research studies on cotton production, ginning, marketing and cotton utilization are all directed toward reduction of costs and improvements in the quality of cotton products.

Mr. Martin, from headquarters at Clemson, S. C., will work with the processors of cotton and cotton products to widen the application of available research information. This should help improve cotton's competitive position and benefit all phases of the industry from producers to consumers.

The results of cotton utilization research will be disseminated through national and local industry organizations, textile schools and contacts with individual mills. In order to keep the program on a manageable basis, the initial work will be limited to single new developments bearing on such utilization problems as: (1) opening and cleaning cotton at the mill; (2) nep control and increased card production; (3) new tightly-woven cotton fabrics to meet special consumer needs; (4) more effective use of fiber properties to produce higher quality products at lower cost. Later, results of chemical finishing research will be included under the Extension Service utilization program.

Mr. Martin will work co-operatively with research agencies, industry organizations and state extension services in planning and conducting programs in this new field of extension work. An important part of the utilization specialist's function will be to find out the current utilization problems of the cotton industry and present them to the Southern Utilization Research Laboratory and other research and service agencies of the United States Department of Agriculture, the state extension services and others for consideration and further development of research efforts to better meet industry needs.

### A.C.M.I. To Hear Senator Eastland

U. S. Senator James O. Eastland of Mississippi will address the final session of the annual convention of the American Cotton Manufacturers Institute at Palm Beach, Fla., April 2, according to an announcement by the organization's headquarters at Charlotte, N. C. As senior Senator from a major cotton producing state and a member of the Senate Agriculture and Forestry Committee, Senator Eastland is rated among the nation's authorities on government policy relating to cotton agricultural problems.

A.C.M.I. officials pointed out that there is a close parallel of interest between mill men and cotton farmers, owing to the fact that the spinning and weaving plants of this country buy two-thirds or more of the cotton grown on

American farms each year. An agricultural sub-committee headed by Senator Eastland is undertaking a full-scale study of the problem of disposal of surplus agricultural commodities, including cotton, and recently has called experts from all sections of the cotton industry for testimony and consultation.

The Mississippi Senator is also a cotton farmer in private business, conducting substantial farming operations in the Mississippi Delta area.

The annual meeting of A.C.M.I., central trade organization of the textile industry, will begin Thursday, March 31. A prominent member of the government customarily addresses the final session on Saturday morning. Institute officials said the appearance of Senator Eastland on the program will be particularly timely in view of various trade and export pricing proposals pertaining to cotton now before Congress.

### Fiber Testing Course To Be Offered

Cotton Economic Research, a research unit sponsored by the Cotton Research Committee of Texas and located at The University of Texas, will conduct its sixth annual short course beginning April 11. The course will last four weeks and will cover the use of fiber testing instruments and interpretation of data. Instruction will be given on the use of instrument measurements in merchandising cotton, the detection of operational difficulties in fiber testing instruments and their correction, and the limitations of the instruments.

During the progress of the course information will be presented on fiber characteristics of various cottons, quality control techniques in fiber testing and the fiber properties and quantities of foreign and American cottons. Tolerances for specified fiber instruments and how tolerances may be used in cotton trading will be discussed. Work will be done on sampling methods designed to show the variation in fiber properties of cotton from specific areas and in lists of "even-running" cotton. Visits will be made to nearby cotton mills and to the U. S. Department of Agriculture laboratory at College Station, Tex. The eighth annual Cotton Merchandising Clinic, scheduled for May 6 and 7, comes at the conclusion of the four weeks course. The tuition fee is \$100, not including living expenses. It is suggested that students arrive the week end before classes begin on Monday, April 11. Additional information can be obtained by contacting Joel F. Hembree, Cotton Economic Research, P. O. Box 8020, University Station, Austin, Tex.

### Industrial Rayon Report Reflects Optimism

Industrial Rayon Corp., in its annual report issued at Cleveland, Ohio, March 1, reported net income of \$7,404,829 in 1954 compared to net income of \$8,633,700 in 1953, when net sales reached a record of \$70,301,603 as compared with \$65,916,451 last year. Expenditures for plant and equipment amounted to \$5,457,000 and included the cost of the firm's new nylon staple fiber plant, exceeding depreciation and retained earnings by only \$573,000.

"Considering the curtailment and distribution problems of the year just past, and the fact that our over-all operating rate for the year was below 75 per cent, we feel the results of our operations are relatively favorable," Hayden B. Kline, president, said in his letter to stockholders. "The financial health of our company continues well maintained



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and in certain respects has been further strengthened." He pointed out that after a slump in the textile market which had continued for several years "the months of November and December witnessed increased sales of textile rayon, reflecting improved retail activity backed up by the very low inventory positions which prevail at all levels in the textile industry. It is the judgment of experienced observers that a corner has been turned and that rayon will enjoy an improved market atmosphere in the period ahead. Our own recent sales experience supports this judgment."

The report stated that conversion of the company's tire rayon manufacturing facilities to higher strength tire rayon of improved properties was completed about mid-year and that activities for still further improvement of this product have advanced to the pilot plant stage.

Commenting on new markets, the report pointed out that the company's Spun-Lo knitted rayon fabric was introduced into the infants apparel field in the form of vinyl bonded waterproof baby pants which have received enthusiastic consumer acceptance. Production of nylon staple fiber was started at the new Covington, Va., plant in October. Due to delays in completion of the plant of the domestic supplier of raw material for this product, operations thus far have been on a limited basis, but Kline expressed confidence that adequate raw material will be available in the near future. Customer relationships already established have brought expressions of "great interest in the new and different characteristics of our nylon staple fiber," the report states, adding that the extent of the new nylon plant's contributions to earnings and the adequacy of its capacity will be determined by the success of market development efforts. "The nylon staple plant and the process which it employs are satisfactory and efficient from the standpoint of production and quality of the product manufactured," according to Mr. Kline.

## Pelzer Retains Basketball Crown

The Pelzer (S. C.) Plant of Kendall Cotton Mills retained its Class A men's title in the Southern Textile Basketball Tourney, held March 2-5 at Textile Hall, Greenville, S. C., by defeating the Victor Monaghan Mills division of J. P. Stevens & Co. Inc. Other winners were Beacon Mfg. Co., Swannanoa, N. C., Class B boys; Piedmont (S. C.) Mfg. Co. division of J. P. Stevens, Class C boys; and Pelzer (S. C.) Plant of Kendall, girls.

W. M. Wilbanks, Riegel Textile Corp., Ware Shoals, S. C., was elected president of the Southern Textile Athletic Association during the tournament. Horace Whitmire, Hunt Loom & Machine Works division of Abney Mills, Greenville, was named vice-president and assistant treasurer; Bruce Stroupe, Judson Mills, Greenville, executive secretary; and Divver Hendrix, J. P. Stevens & Co., Greenville, treasurer. Elected to the executive committee were: Hugh Anderson and C. H. Thomas, J. P. Stevens & Co., Greenville; Sam Patton, American Enka Corp., Enka, N. C.; Walter Lauter, Peerless Woolen Mills, Rossville, Ga.; Jack Reams, Deering, Milliken & Co., Abbeville, S. C.; S. R. DuBose, Aragon-Baldwin Mills, Whitmire, S. C.; J. D. Brown, Union Bleachery, Greenville; Ed Dickard, Poe Manufacturing Co., Greenville; Fred Johnson, American Spinning Co., Greenville; Jim Collier, Woodside Mills, Greenville; Leonard Muth, Kendall Cotton Mills, Pelzer, S. C.; W. A. Griffith, Utica-Mohawk Mills, Seneca, S. C.; Ray A. Wynn,



Abbey Mills, Greenville; J. B. Owens, Easley, S. C.; J. D. Hardin, Beacon Mfg. Co., Swannanoa, N. C.; Fred Snoddy, Greer, S. C.; and Mr. Wilbanks.

### Polytechnic Institute Schedules Conference

The Institute of Polymer Research at the Polytechnic Institute of Brooklyn, N. Y., has announced that, as part of a symposium on "Fundamental Fiber-Fabric Relationships," a conference on "A Challenge to Industry" will be held Saturday, April 2. Jack J. Press, fiber specialist of the U. S. Navy Clothing Supply Office, will be symposium chairman and J. B. Goldberg, chemical engineering consultant, will act as conference chairman.

The program will include papers by W. W. Heckert, E. I. du Pont de Nemours & Co. Inc., "A Challenge to the Textile Industry"; George S. Buck Jr., National Cotton Council of America, "Potentials for New Technical Developments with the Natural Fibers"; and Jules Labarthe of the Mellon Institute, "Textile Developments—The Consumer's Verdict."

A general discussion on "The Significance of New Fiber Developments" will have as panel members Messrs. Press, Heckert, Labarthe and Buck and Thomas G. Hawley Jr., United Merchants Laboratories Inc., New York City, and Edgar L. Schlesinger, Old Fort (N. C.) Finishing Co.

### Alabama Cotton Men to Meet April 13-15

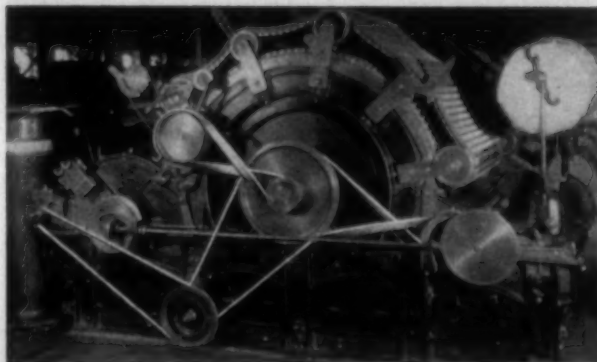
The 54th annual meeting of the Alabama Cotton Manufacturers Association will be held in Biloxi, Miss., April 13-15, with the Buena Vista the convention hotel. Featured speakers at the meeting include Herbert Werner, textile consultant, New York City, who will speak on "The Fabulous Future of Textiles," and Fred A. Hartley Jr., co-author of the Taft-Hartley Act, who will speak on "The National Right-To-Work Committee."

The first business session will be Thursday afternoon, April 14, when T. H. Floyd, president of the association, will make his report on activities of Alabama mills during 1954. Reports will also be made by the chairman of the cotton committee, cotton improvement committee, public relations committee, operating executives committee and textile education foundation. The report of the nominating committee will conclude this session.

The second business session, Friday morning, April 15, will feature the addresses of Messrs. Werner and Hartley. The report of the traffic committee, treasurer and resolutions committee will also be made.

Presentation of the Comer Textile Safety Trophies will be made by Hugh Comer, chairman of Avondale Mills, Sylacauga, Ala., at the Friday morning session. Other activities at the meeting will include the association's traditional "welcome party," the annual "Linthead Ball," the annual golf tournament and, to conclude the meeting, the annual banquet on Friday evening.

The nation's maintenance expenditures will increase by one billion dollars in 1955, a General Electric Co. executive predicted recently. Howard F. McCullough, general manager of General Electric's service shops department, said that this figure will be approximately nine per cent higher than last year's outlay. He based his forecast on an increasing industrial trend towards the use of automation, or automatic methods for continuous manufacturing processes.



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## Continued Recovery Predicted For 1955

Continued recovery in the textile markets, with better merchandising, improved earnings, steadier employment and a production rise of five to ten per cent have been predicted for first half 1955 and probably for the full year by W. Ray Bell, president, The Association of Cotton Textile Merchants of New York. In his report to the association's recent annual meeting, Mr. Bell estimated production of cotton textiles in 1954 at 9,794,000 linear yards, down four per cent from 1953, an adjustment made necessary by the continuation of depressed conditions from 1953 and over much of 1954. He warned of the grave dangers to textiles arising from increased Japanese imports, and from government moves further to reduce tariffs from their already inadequate level.

At the meeting the following were elected to the Association's board of directors: Hamilton C. Albaugh of Avondale Mills Inc.; Wayne J. Holman Jr. of Chicago Mills Inc.; Floyd W. Jefferson Jr. of Iselin-Jefferson Co. Inc.; John P. Stevens Jr. of J. P. Stevens & Co. Inc.; and Ridley Watts of Spartan Mills Inc. Board Chairman Saul F. Dribben presided at the meeting and reports were made by Mr. Watts as treasurer and John L. Severance as secretary.

Noting that customer policies of liquidation and close hand-to-mouth buying in textiles had run their course by the beginning of the last quarter of 1954, Mr. Bell remarked that "many customers in all divisions of product have resumed policies of forward purchases, to anticipate reasonably sure future needs and with confidence that price trends will move upward. This optimism is grounded in their own satisfactory business and future prospects." Wholesale prices of cotton goods in December, he noted were ten per cent under the 1947-49 averages, contrasting with other manufactured goods averaging 14 to 15 per cent higher, and are consequently attractive to the trade.

## Shippers Oppose Rail Rate Revisions

The proposal by Southern rail lines that a general revision be made in rates for cotton piece goods and related articles was sharply criticized at a recent meeting of representatives of shippers and users of textile products. The meeting, held in Atlanta, Ga., was called by the Textile Traffic Managers Conference, and was attended by representatives from all over the nation. Sticking to their earlier stand on the subject of rates, the shippers still emphasize that the railroads must improve their service not their rates if they are to recover the textile traffic they have lost. Generally the representatives at the meeting were not opposed to any reduction in carload rates that might result but were against the rate revisions as drawn. Several expressed themselves as feeling that not only will the proposed revision be ineffectual in increasing traffic for the railroads, but would eventually result in higher rates and over-all losses to mills and their customers.

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## January Cotton System Spinning Activity

The Bureau of the Census, Department of Commerce, has announced that, according to preliminary figures, 22,495 thousand cotton system spinning spindles were in place in the U. S. on Jan. 29, 1955. Of these, 19,282 thousand were consuming cotton, 1,500 thousand were consuming other than cotton, and 1,713 thousand were reported idle. The total cotton system spinning spindle hours reported for the January 1955 period amounted to 9,934 million, an average of 496.7 million hours per working day (based on 20 days). During January cotton system spinning spindles operated at 138.0 per cent of capacity (based on 20 days of 16 hours) compared with 122.5 per cent for December (based on 25 days of 16 hours).

## Synthetic Broad Woven Goods Production

Production of synthetic and silk broad woven goods was 619 million linear yards during the fourth quarter of 1954, according to the Bureau of the Census, Department of Commerce. This is 14 per cent above the third quarter output, and 11 per cent above the fourth quarter 1953 level. Production of rayon and acetate fabrics increased 13 per cent during the fourth quarter while nylon fabric output increased eight per cent.

## Carded Cotton Yarn Orders Up 23% In January

During January carded cotton sales yarn spinners increased their backlogs of unfilled orders by 23 per cent, the Textile Information Service reports. On Feb. 5, unfilled orders on spinners' books amounted to 9.95 weeks' production and were 6.65 times stocks on hand. This compares with backlogs on Jan. 8 equal to 8.86 weeks' output and 5.16 times stocks. On Jan. 30 last year, unfilled orders amounted to 6.78 weeks' production and were 3.07 times stocks on hand. Spinners' inventories, including yarn made for future deliveries against unfilled orders, amounted to 1.50 weeks' production on Feb. 5. On Jan. 8, stocks equalled 1.72 weeks' output and on Jan. 30, 1954, they were equal to 2.21 weeks' production. According to figures compiled by the Carded Yarn Association covering reports from 1.4 million member spindles, production in the week ended Feb. 5 consisted of 33.1 per cent knitting yarn, 36.4 per cent weaving yarn and 30.5 per cent all others. On Jan. 8, the percentages were 36.2 and 31.2 respectively.

## Cotton Fiber Mysteriously Falls On Town

A gray, cobwebby substance that fell out of the sky over Horseheads, N. Y., last month was identified after exhaustive tests as heavily damaged cotton fiber. Dr. Charles B. Rutenber, professor of chemistry at Elmira College, said the condition of the fiber indicated that it was waste material or had been damaged in some sort of explosion.

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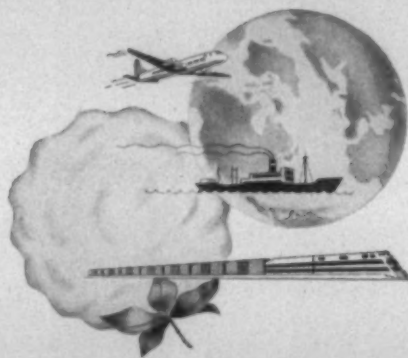
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# Before Closing Down

—TEXTILE INDUSTRY HAPPENINGS AS THIS ISSUE WENT TO PRESS—

## PERSONAL NEWS

T. Edgar White has been promoted to sales manager of the Southern Dyestuff Corp., Charlotte, N. C. Mr. White has been with the company since 1937 . . . Feaster V. Tribble has been named manager of Sherdye sales . . . George L. Dozier has been named district manager.

John D. Cooper Jr., vice-president and general manager of Harriett Cotton Mills and Henderson Cotton Mills, both of Henderson, N. C., has been elected president. Mr. Cooper, who has been with the mills since 1927, succeeds J. Allison Cooper, who has retired due to reasons of health. Mr. Cooper had been president and director since 1941 . . . M. Y. Cooper, brother of the new president and treasurer since 1951, was elected vice-president and will continue as treasurer. He has been with the mills since 1942.

John W. Bolt, formerly with Burlington Industries, has been named card room overseer at the Arkray Plant of Textiles Inc., Gastonia, N. C. Mr. Bolt is a native of Laurens, S. C.

Earle R. Stall Jr., superintendent of preparation of the Dunecan Plant of J. P. Stevens & Co. Inc., Greenville, S. C., has been named assistant to W. W. Rogers, plant manager of American Spinning, Greenville, S. C., a unit of Cone Mills Corp. Mr. Stall, who will assume his new duties April 1, has been associated with Dunecan for seven years, the past three as superintendent of preparation.

W. H. Miley Jr., general superintendent of Erwin Mills Plants No. 2 and 5 at Erwin, N. C., since 1941, has been named assistant plant manager at Erwin, succeeding Marchant C. Cottingham, who recently was named general manager of the company with headquarters in Durham, N. C. J. K. Bruton, superintendent of Plant No. 5 since 1948, has succeeded Mr. Miley as general superintendent.

John I. Brown has been named sales engineer of the industrial division of The American MonoRail Co. at the Charlotte, N. C., district office, succeeding L. Payne Helbert. Mr. Helbert has been reassigned to the company's home office in Cleveland, Ohio.

Leonard K. Fitzgerald, general superintendent of Dan River Mills Inc., Danville, Va., since 1953, has been named to an executive position with Burlington Industries. Mr. Fitzgerald, who has been with Dan River since 1935, will assume his new duties sometime after April 1. Succeeding him at Dan River is Roy M. Stephens, superintendent of manufacturing in the griage mills. Mr. Stephens has been with Dan

River since 1946. Prior to that he was associated with the Bibb Mfg. Co. of Columbus, Ga., for 11 years.

Two new vice-presidents were elected at the recent stockholders' meeting of Ely & Walker Dry Goods Co., St. Louis, Mo. The new vice-presidents are Charles A. Gibson, Greenville, S. C., director of manufacturing; and Robert D. Sellers, president of Southern Bleachery & Print Works Inc., Taylors, S. C., a majority of whose stock has been owned by Ely & Walker since 1952. Mr. Sellers was also named to the board of directors. Mr. Gibson has been a member of the board since 1950, and in his present manufacturing post since 1946.

John Henry has resigned as assistant manager of Hyde Park Mills Inc., effective March 19, to accept the position as manager of Coosa Yarns Inc., Attalla, Ala.

The following personnel changes have been announced by Riegel Textile Corp.: G. T. Gardner, formerly a vice-president of Burlington Industries, will join Riegel on May 1 as executive vice-president, a director of the corporation and a member of the executive committee. A graduate of N. C. State College, Mr. Gardner joined Cramerton (N. C.) Mills in 1934. When Burlington acquired Cramerton in 1946 he remained with the Burlington organization. . . . Preston H. David, former managerial assistant at the Ware Shoals (S. C.) Division and former assistant superintendent of dyeing and finishing in the Trion Division, has been promoted to assistant general manager of the Trion Division, where he succeeds R. P. Hardeman, who has been named assistant general manager at the Ware Shoals Division to succeed J. A. Byars. Mr. Byars has resigned to become general superintendent of Fairforest Co., Eagle & Phenix Division, a subsidiary of Reeves Bros. Inc.

Walter Knoepfel, formerly plant manager of Alta Vista, Va., finishing plant of Burlington Industries, has been named plant manager of Bishopville (S. C.) Finishing Co., a subsidiary of Reeves Bros. Inc.

John D. Willingham Jr. has succeeded his father as president of Egan Cotton Mills, College Park, Ga. The senior Mr. Willingham died of a heart attack Jan. 25.

A complete slate of officers and directors has been officially released by Amerotron Corp. following the merger of American Woolen, Tectron Inc. and Robbins Mills. Listed on the board of directors are Royal Little, chairman; Robert L. Huffines Jr., Burke M. McConnell, George J. Bienstock, William H. Burroughs, Ely R. Callaway Jr., R. M. Cushman, Frank Fiore, Morris Gardner, Herman E. Goodman, Amos H. Griffin, Lowell E. Hawthorne, Edmon G. Luke,

William D. Mewhort, Albert E. Otto, Frank T. Roberts and J. Linzee Weld. Officers include Mr. Huffines, president; Mr. McConnell, executive vice-president; George E. MacLellan Jr., treasurer; Cecil E. Whitney, secretary. Named as vice-presidents were Mr. Bienstock, Sam Boosin, Mr. Callaway, Mr. Fiore, Mr. Gardner, Mr. Goodman, Mr. Griffin, Clinton C. Griffith, Mr. Hawthorne, Murray Kramer, Mr. Luke, Mr. Newhort, Ernest H. Miller, Mr. Otto, Mr. Roberts, Herbert Sieben, Lawrence Weiss, Mr. Weld and Christian A. Wiessner.

## MILL NEWS

GREENVILLE, S. C.—A 30,000 square foot extension to the present weave room at White Horse Mill here is expected to be completed by June, according to H. W. Duguid, manager of the plant. The new section will make room for 400 more looms to be installed in July. Daniel Construction Co. of Greenville is the contractor.

BURLINGTON, N. C.—Celanese Corp. of America is erecting a pilot plant at its spun yarn plant here to be used for the purpose of evaluating, producing and supplying data for processes for fibers in various non-woven constructions. The pilot plant is a phase of a Celanese program for accelerating expansion of the industrial applications of its fibers in non-woven fabrics, low-pressure laminates, air and liquid filters, acoustical and heat insulation and special batting products.

LEXINGTON, N. C.—Erlanger Mills Inc. has won a safety trophy for completing 2,000,000 man-hours of operation with only four lost-time accidents. The firm's accident frequency rate is 2.0, as compared with the national average of 5.51 for the textile industry, as reported by the National Safety Council.

GREENSBORO, N. C.—Formation by Burlington Industries of a central cotton buying agency which has the over-all responsibility for the purchase of all raw cotton for Burlington Mills and Pacific Mills, has been announced by Spencer Love, chairman of the board. Burlington Mills and Pacific Mills are member organizations of Burlington Industries Inc. William A. Julian has been named director of the central cotton buying agency with Ben P. Whitney serving as assistant director. Headquarters of the agency are at Cramerton, N. C. Staff member executives of the agency are R. P. Elmore Jr., controller; Thomas Knowles and Sam Daniels, head cotton classifiers; and Dudley Jennings. The latter will handle all waste sales in addition to his other duties. Mr. Julian has been associated with Burlington Mills in charge of cotton buying since 1943. Mr. Whitney has been responsible for cotton buying at Pacific for a number of years.

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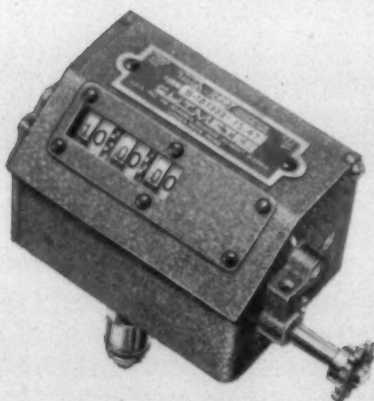




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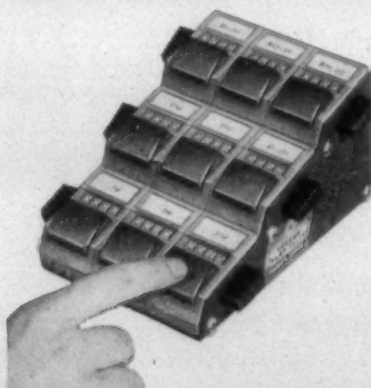
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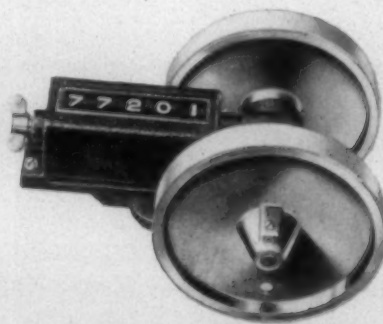
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Records the measurement of cloth in yards, eighths of yards, feet or practically any other linear unit. Friction wheels, one foot in circumference, are finely finished to prevent injuring the most delicate fabric. Rubber (as shown above) and plain finished, wheels supplied on order. Accurate and durable because of ball-bearing shaft-mounting. Reset and Non-Reset Types.

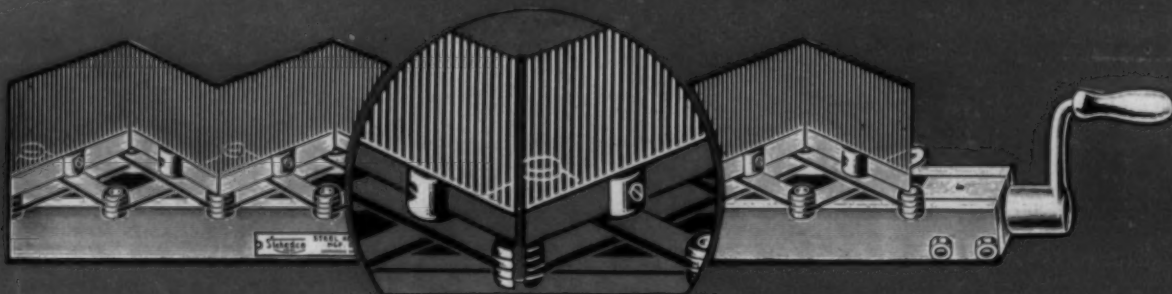


**VEEDER-ROOT INC.**

*"The Name that Counts"*

# Look TO Stehedco

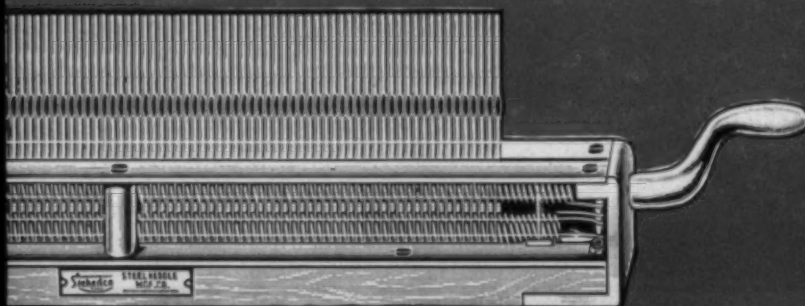
...for these **WARPER ACCESSORIES**



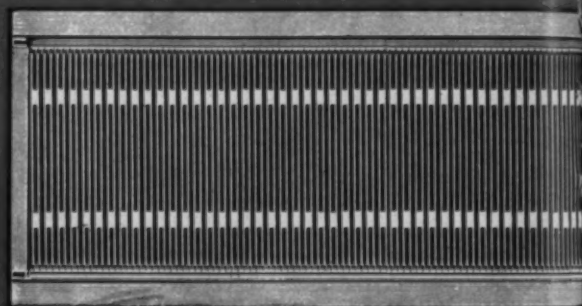
## POSITIVE EXPANSION COMBS-

Stehedco construction, best by far, features the locating lug thus insuring faster more accurate positioning at the joints.

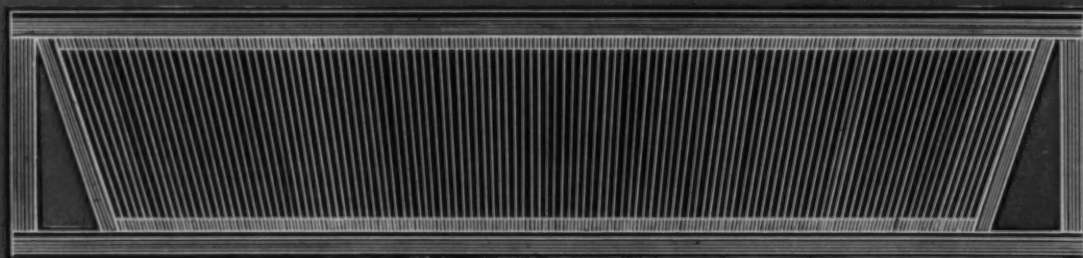
All Stehedco Warper Combs and Reeds are Hard Chrome Plated to give maximum wear resistance



**SPRING EXPANSION COMBS** — Whatever type you prefer, Stehedco has it! — Screw or Tape type; plain dents, eye dents for leasing or staggered dents. Screw type with eye dents is illustrated.



**CROSSING REEDS** — Single crossing reed (illustrated) for a single end lease. The Stehedco four way crossing reed is also very popular for obtaining a four sheet and single end lease.



**FAN REEDS** — Advanced construction methods insure the most uniform spacings possible. A good point to remember is that

a fan reed increases in cost and decreases in spacing uniformity as the fan is increased. For best results keep the fan to a minimum.

Sales prints covering any of these items are available upon request. Ordering is simple... just fill in the specification blocks on the print.

If you need help Stehedco field or plant experts are always available. Watch for the new Stehedco catalog on Warp and Yarn Preparation items coming off the press soon.

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